DOCUMENT RESUME

ED 075 408 SP 006 375

TITLE	Annual Safety Education Review 1972.
INSTITUTION	American Association for Health, Physical Education, and Recreation, Washington, D.C.
PUB DATE	72
NOTE	94p.
AVAILABLE FROM	AAHPER Publication-Sales, 1201 16th St., N.W., Washington, D.C. 20036 (Stock No. 244-25410 $2.75)
EDRS PRICE	MF-$0.65 HC Not Available from EDRS.
DESCRIPTORS	Accident Prevention; *Driver Education; First Aid; *Health Education; *Physical Education; *Recreational Activities; *Safety Education; School Safety

ABSTRACT

This booklet presents articles completed in 1972 by the Division of Safety Education of the American Association for Health, Physical Education, and Recreation. The introductory article contains the accomplishments of the division in 1971-72. The major points covered are planning conferences, conventions and meetings; revising the operating code and a career brochure on safety education; and contributing to the literature in the area of safety. The other 12 articles in the booklet include information on the following topics: a) safety in outdoor recreation; b) alcohol safety; c) safety in elementary school physical education; d) injuries in intramural sports; e) high school student trainer program; f) football injuries; g) emergency care education; h) the Driving While Intoxicated program from Phoenix, Arizona; and i) the Wisconsin Accident Benefit Plan. A list of other safety education publications is also presented. (BRB)

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ANNUAL SAFETY EDUCATION REVIEW

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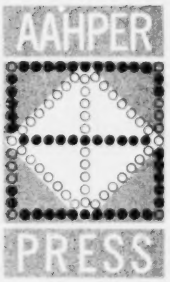

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Accomplishments of the Division, 1971-72

JOSEPH G. DZENOWAGIS

Michigan State University
East Lansing, Michigan

The Safety Education Division continues to serve the diverse interests of AAHPER members through inter- and intra-division activities, multiagency projects, and cooperative efforts at national, regional, state, and local levels. Programs, activities, and projects during the past year have emphasized this service function; plans for the coming year continue this emphasis in high priority, special interest, specific problem, and critical issue areas.

Conferences, Conventions, and Meetings

A National Sports Safety Congress: A Community Approach to Accident Prevention and Injury Control in Athletics, Physical Education and Recreation is scheduled for February 15-17, 1973 in Cincinnati, Ohio. This Congress will focus on school and community programs and deal with current issues, including identification of national and state resources that enhance sports accident prevention and injury control. The major and unique goal of the Congress is to make diverse disciplines aware of common safety factors and problems relative to sports, physical education, and recreational activities.

The Division chairman participated in meetings and activities to promote interagency cooperation and multiagency teamwork. Meetings included those of the National Conference on Physicians and Schools, Health Education Test Committee to develop an AAHPER Cooperative Health Test, Elementary and School Safety Section of the National Safety Council and the national organizations involved with the Committee on Medical Aspects of Sports of the American Medical Association.

Kenneth S. Clarke, vice president-elect of the Division and committee members Marlene Bieber, J. Duke Elkow, Dewey Langston, Edward Mileff, and Gelinda Vescolani planned programs for the Houston Convention which dealt with topics such as safety in elementary physical education, synthetic surfaces, drugs and the driving task, safety in outdoor education, and emergency care education. Overall reaction to programs was good, and interest in each program warranted consideration for followup in Minneapolis.

Projects

Professional Preparation -- Guidelines to accompany new standards for the Accreditation of Teacher Education (NCATE) have been developed and are expected to be useful to institutions improving their basic and advanced teacher education programs as they relate to the preparation of elementary and secondary personnel and to NCATE evaluators as they judge teacher education in safety. Personnel throughout the country have been contacted to respond to a Division questionnaire on professional preparation in safety education; responses to this questionnaire have been good. The Division will be represented in the AAHPER Professional Preparation Conference in New Orleans in January 1973.

Operating Code -- The Division Operating Code was revised, updated, and submitted to the Structure and Functions Committee.

Safety Education Career Brochure -- This brochure has been revised and release is planned for fall of 1972. Similar materials are used in Vital Information for Education and Work (VIEW) programs and activities.

Research -- The first annual meeting of the formally organized Safety Education Division Research Committee was held in December 1971. Deliberations emphasized (1) structuring

guidelines for AAHPER Safety Education Research Committee; (2) accepting a list of potential activities for the Research Committee; (3) exploring possibilities for and potential of a safety research textbook; and (4) examining need for and elements of a safety research conference. Definite plans and special meetings have been held regarding a safety research textbook to be developed cooperatively with the National Safety Council.

Orientation of New Executive Council Members -- Materials for newly elected Division officers and Executive Council members were developed to interpret the Association, the Division, and responsibilities of officers. Distribution of materials and implementation of the program were integral parts of a special orientation luncheon for new officers and members of the Executive Council during the Houston Convention.

Reorganization -- The Safety Education Division proposed establishing a Society for School and College Safety and a Safety Coordinating Council to provide best for the safety interests of personnel constituting an alliance type plan of professional organization. The bifocal structure of this particular component unit permits, through the Society at large, establishment of programs enabling concentrated efforts by persons whose primary professional responsibility deals with accident and injury control, and through the Coordinating Council programs of application for other professionals whose competencies include utilization of safety concepts and principles.

Publications

Sports Safety -- This textbook was prepared under contract from the Bureau of Community Environmental Management (Injury Control), U. S. Public Health Service, Department of Health, Education, and Welfare; it deals with accident prevention and injury control in physical education, athletics, and recreation.

Annual Safety Education Review - 1971 -- This 78-page booklet contains major papers presented at Safety Education Division programs at Detroit Convention along with selected articles focusing on priority issues in safety.

Teaching Safety in the Elementary School -- A committee charged with revising this publication has been appointed and has started review-revision process; revisions are to include updated references and new format and artwork.

Suggestions and revisions were submitted to the committee chairman in June 1972; release of revised edition is planned during 1972-73 fiscal year.

Drugs and the Coach -- This 64-page booklet, published by AAHPER, was developed by the Safety Education Division in cooperation with the Division of Men's Athletics, Division for Girls and Women's Sports, and School Health Division. It arose out of a symposium held at Mankato State College, Mankato, Minn. It is available through AAHPER Publication Sales.

Safety in Outdoor Recreation

JOHN P. FLEMING

National Safety Council
Public Safety Department
Chicago, Illinois

As a member of the National Safety Council (NSC) staff I feel very much at home before AAHPER, and particularly those divisions most concerned with outdoor education, camping and recreation. Our missions have much in common. As educators, recreation leaders and researchers, you have considerable responsibilities for preparing young Americans to live and to enjoy life to its fullest. How well you achieve this objective is directly related to the NSC mission--that of promoting methods and procedures leading to increased safety, protection, and health for all Americans.

The subject of increased safety for all Americans has never before enjoyed the attention it is currently receiving at almost every level of society. The full importance of annual losses caused by accidents has finally reached the point of public awareness and appreciation. Let's examine some ways in which we can capitalize on this belated attention. First, a critical look at this national problem may be in order.

National Accident Problem

The 1971 accidental death total was approximately 114,000, unchanged from the 1970 death toll. Disabling injuries numbered 10,800,000 including 400,000 which resulted in some degree of permanent impairment.

The death rate in 1971 per 100,000 population was 55.3, a decrease from the 1970 rate of 56.0. This 1971 rate was the lowest since 1967. Indications are that in 1971, as in earlier years, accidents were the fourth most important cause of death, exceeded only by heart disease, cancer, and strokes.

Of greater relevance, to you as teachers and recreation leaders, is the fact that accidents are the leading cause of death for both sexes between the ages of one and thirty-eight. It is not surprising that those activities with great opportunities for recreation also provide the principal environments for such fatalities.

Traffic deaths associated with recreation driving and accidental drownings while playing in or around water areas are the two most significant factors influencing the mortality picture. Unfortunately, the double threats of traffic and drowning will probably be the two most difficult loss categories to reverse or even to retain at their present levels. I say this in spite of the impact by a number of new allies playing an active role in the field of accident prevention. These new allies have given safety forces a much needed boost.

Federal Legislation

The newest ally is federal legislation. Enough time has now passed that we can begin to evaluate the real dimensions of this federal effort, particularly in terms of the financial support that has been and is being provided. The National Highway Traffic Safety legislation is now six years old. Of the specified authorization for this highly commendable program, only 57 percent has actually been appropriated. The Motor Vehicle Standards Program is also in its sixth year of the specified authorization in support of commendatory activities, yet only 55.7 percent has actually been appropriated. The air pollution program, about which there has been such feverish publicity, is another victim of more promises than performance. Of the various specified authorizations intended to back what has been

legislated, only 46.3 percent has actually been appropriated. Flammable fabrics legislation, about which there has been grave concern, is now over three years old. Of the specified authorizations intended to make the legislation work, only 13.5 percent of the money has actually been appropriated. The record for implementing other safety legislation is similarly disappointing. So, while we observe numerous legislative thrusts, we are not likely to see any major safety breakthroughs based on legislative enactments alone.

This is in no sense derogatory to the importance of federal legislation. Government can bring changes in those areas of need that would be slow and difficult, if not impossible, by persuasion alone. In fact, the NSC has over the past two years testified before Congressional committees in support of product safety, the Occupational Safety and Health Act, and the Federal Boat Safety Act, all of which passed, and the Youth Camp Safety Act (Daniel's bill H.R. 1264) which did not pass. Those of you in the service, state, county or municipal governments may be interested in knowing that there may be no direct federal jurisdiction over state and local employees under the provision of the Occupational Safety and Health Act. Your state governments may, however, provide for a safety program at least as effective as the federal program to provide protection for public employees. As the employees most directly affected by this program imbalance, it would appear highly proper for you as individuals or through your state associations to inquire at state level just what is your state's program of occupational safety for public employees.

The NSC is prepared to offer you one approach--simply request from NSC a copy of the booklet titled, A Program Guide for Public Employee Safety. This is available in single quantities at no cost.

Public Employees' Safety

The safety of the public employee has been sorely neglected through the years as indicated by data provided to NSC. The injury frequency rate for municipal employees is three times as high as that of the industrial worker. While this may not be very surprising when you consider the hazards associated with police and fire department operations, I was shocked to find park and recreation departments have a disabling

injury rate higher than those incurred by municipal fire departments. In a recent message to an assistant cabinet officer, Howard Pyle, president of the NSC, said "It may be assumed the safety posture of the public employee is as much as 35 years behind the times. Too often top officials are unaware of the facts and they make little, if any, efforts to make known what they are." I believe we must practice what we preach or stop preaching. The quality of leadership at the state and community level so apparent in the ranks of AAHPER is what needs to be mobilized now. I would like to direct attention to a long neglected type of accident. Let's speak of drownings. This has got to be the most neglected safety issue in America today.

Drownings

Each year we lose over 7,000 lives because of drownings. While the circumstances range from infants in bathtubs to senior citizens falling into ornamental ponds, the real bulk of the problem centers on the active years, that is, among the youngsters with whom you have the most contact. One rather obvious countermeasure is to teach everyone to swim and to take care of himself in the water. In cooperation with the Red Cross, YMCAs and several other service organizations, we have been promoting the concept of Operation Waterproof 4th Grade. This is intended to establish the machinery whereby each and every child learns a swimming skill by the time he reaches the 4th grade level.

The results, after some six years experience, are mixed. In spite of the best efforts of the service organizations that provide this instruction, we still have reason to believe that there are about one million children born each year who never will receive any type of formal swimming instruction. The principal obstacle is the shortage of swimming facilities or the underutilization of existing swimming pools.

There is also growing concern over the safety implications of the infant learn-to-swim programs that have captured the attention of many service organizations. This concern has been shared by representatives of the Council for National Cooperation in Aquatics (CNCA) for several years now. The CNCA in consultation with other groups, particularly the American Medical Association and the Academy of Pediatrics, finally

arrived at a policy position which is expressed in the following statement developed during a closed workshop at Yale University in 1971:

> Because certain considerations affecting the child's learning and safety require a degree of development not attained by most children before they are three years old, the Council for National Cooperation in Aquatics recommends that the minimum age for organized swimming instruction be set at age three, and that it is imperative that parents be made to realize that even though pre-schoolers may learn to swim, no young child, particularly the pre-schooler, can ever be considered "water safe" and must be carefully supervised when in or around water.
>
> Guiding Principles
>
> For organized pre-school swimming programs CNCA recommends the following guiding principles:
>
> 1. Pertinent health information about pre-existing conditions which would affect a child's ability to participate in the activities should be obtained from the parents before a child is accepted into the program.
> 2. Swimming instruction of pre-school children requires a staff of sufficient number to provide a very low ratio of instructors or aides to children. This requirement may be met by using parents and other volunteer aides working directly under professionally competent leaders.
> 3. Parents' involvement in and understanding of the program is essential. Their orientation should include:
>
> (a) Complete understanding of program objectives.
>
> (b) A clear picture of the skills that can be developed by the young child as well as the realization of his limitations.
>
> (c) Their responsibility in supplementing and enhancing the role of the instructor.
>
> (d) Accepting their role in the supervision of the pre-school child any time the child is near water.
>
> 4. Orientation of the child to facilitate adjustment to the total physical environment should precede the first class experience.

5. The learning of skills of the young child is directly related to active participation in the instructional programs and to frequency of practice; the retention of skills is dependent upon reinforcement through frequent opportunity to participate.

6. The water temperature usually found in multiple-use indoor pools (in the range of 78-82 degrees) is acceptable for most children in this age group, provided that the teaching procedures include continuing vigorous activity.

7. Suitable flotation devices when used in a controlled teaching situation help promote safer participation and can enhance learning.

The 7,000 plus drownings referred to earlier include approximately 1,400 cases that are associated with recreational boating. The most promising countermeasure is now before us in the form of the Federal Boat Safety Act of 1971. This is the most comprehensive piece of legislation directed at boating safety since 1958. It carries considerable impact to you as teachers and recreational leaders.

Safety in Elementary School Physical Education

HELEN K. HARTWIG

Teacher, Elementary School Physical Education
St. Louis, Missouri

All healthy youngsters move in various ways--they slide, slip, skip, walk, stamp, scuff, stumble, tumble, trip, topple, grovel, bounce, and juggle. This is why we have a difficult time trying to keep them in one piece, but try we must.

Stack and Elkow define safety education as the art of cultivating the knowledge, skills and attitudes that make for safety.[1] Herbert J. Stack has said, "If we take all the hazards out of physical education and athletics and recreation we will have little left." It is this inherent danger which often makes activities thrilling to our youth, but youth should be taught to (1) understand the hazards of an activity, (2) remove hazards or cope with hazards that cannot be removed, and (3) create no unnecessary hazards.

Just as is the case in many other fields, the teaching of safety has shifted from the home into the school. Both the school and the home should try to guide and develop children

[1] Stack, Herbert J. and Elkow, J. Duke, Education for Safe Living (Prentice-Hall, Inc., 1957).

into mature, responsible adults who are physically whole, and feel secure and adequate to face all life's situations with self-control, good judgment, and consideration for others, with a will to serve honestly and well.

It is in the elementary school physical education program of rhythm, games, tumbling, gymnastics, and motor-space that many accidents take place. More accidents occur when one is moving than when one is still, when standing than when one is sitting.

As teachers of physical education, we should work for the prevention of accidents through the development of skills. It is usually the unskilled or awkward player, other things being equal, who most often injures himself or others in physical activities. Teaching involves emphasizing safety factors as well as techniques and tactics of play. It is frequently the attitude of the individual that makes the difference. Here is where our individualized teaching plays an important part. Know your children and adapt the program to meet the needs of each.

As teachers we must take care in choosing good equipment and then we must see that it is maintained to make it as safe as possible. Playground equipment is often blamed for accidents, but the number and the severity of the accidents could be reduced if the public were made aware of the right kind of surface to install under the equipment. To help in the care and maintenance of equipment, a committee of students can check the apparatus and equipment and report any changes. All children can be trained to watch for loose screws, bent bars, broken glass under or around the area, and report to the committee or to the adult in charge.

It's false economy to buy cheap equipment; money can be saved but what about the children, using a cheap rope to climb, or a cheap bat to swing, or a mat too thin for tumbling?

The good physical education teacher tries to develop skills, attitudes and understanding in the children. One of the first steps in promoting a good safety program is to orient the principal to the concepts of safety and help him to have a high degree of sensitivity to safety. He may not be cognizant of the hazards which exist.

The classroom teacher plays an important part in the safety education program. Accidents can happen so quickly and easily. The classroom teacher can help the children

understand the magnitude of the safety program and the physical education teacher can reinforce this teaching. The "teachable moment" is quite important as far as safety is concerned. A child is not necessarily interested in learning about safety but can be interested in living safely if one follows the principles of good teaching. To help the classroom teacher with the safety program, an inservice workshop might be held, where teachers are made aware of where hazards might be, of how to watch for unsafe behavior. Supervision of children at play should provide guidance for safe use of equipment and should encourage the child to play creatively. The supervising teacher should move about and be constantly alert for hazardous behavior.

General Hazards to Safety

Some of the general hazards to look for are:

1. Protruding objects (to be covered with a mat or other soft material if removal is impossible)
2. Sharp cornered furniture
3. Objects on the floor, like pencils, chalk, and scissors
4. Movable objects in heavily traveled area such as an unused overhead projector in an aisle
5. Furniture or equipment with wide base legs.

It is not enough to say to the student, "safety, safety." Through the many media and the sensory appeals, one can help the child to proceed from the place where he is merely conscious of safety to that point where he develops a conscience regarding safety. Our school is a small community. Its floor, the walls, the stairs and grounds may be faultless, our equipment in perfect repair, our supervision excellent, but an irresponsible student, whether he be dull or brilliant, is a safety risk.

Use of Policeman

One way to help children understand safety while going to and from school is to have the traffic helicopter policeman land on your playground and talk to the children. Our helicopter traffic policeman has developed quite a safety program; he brings along an excellent film on safety on the streets.

Another approach is to sponsor a walk-to-school contest, in which children are divided into teams and given points for walking safely to and from school. This could be the basis for the whole safety program.

More Safety Hazards

Here are some safety hazards to keep in mind:

1. Dogs on the school grounds. Know the policy of your school and act quickly. Children should be reminded that all dogs are not friendly and that some dogs are easily excited by many children, that dogs may not want to bite, but might do so in self-defense.
2. Play guns, knives. Again, know the school policy. If there isn't one, establish one quickly.
3. Snowballing. Do you have rules for this?
4. Fighting.
5. Molestation. This is a difficult one, but one which should be discussed. Use caution and don't frighten children, but help them be aware of the possibility. This could be discussed at a PTA Council and the decisions made should be given to the faculty and parents. It is interesting to note a program in some of our elementary schools. One house in each block has been designated as a safe house, or a block house. It has a sign in the front window, and children are instructed to report there if they need help.

In safety research, much is being done in traffic safety and in home accidents. Physical educators are beginning to make surveys and to study the cause of accidents. This should be a continuing activity and the results should be made available to all physical education teachers and to those trying to improve safety techniques.

Analysis of School Accidents

School accidents for grades K through 12 were analyzed by our state director, Robert M. Taylor. Eighty-seven school districts participated in the 1969-70 school year. Some of the interesting facts revealed in the report (reported in the St. Louis Globe Democrat of July 23, 1971) are as follows:

1. About the same number of accidents occurred in grades 1 and 2 as in grades 11 and 12.
2. Slightly more accidents occurred in the morning (1,701) than in the afternoon (1,502).
3. The greatest number of accidents happened on Tuesday (716) and the fewest on Friday (455).

4. The most frequent types of injury were:

sprain or strain	669
fractures	628
cuts or lacerations	626
abrasions or bruises	605
tooth damage	99
amputations	8

5. The ankle was most frequently injured (316 times) closely followed by the skull or scalp (295 times), fingers or thumb (263 times), forehead (253), knee (211), and lower arm (195).

6. A total of 6,836.5 days of school was lost from accidents; this amounts to about $10,000 in State Aid lost by the school districts.

7. Slightly more accidents occurred in the school building areas (1,552) than on the school grounds (1,420). Only 103 injuries were sustained while going to and from school.

8. The areas that produced the greatest number of injuries were:

playground	983
gymnasium	784
athletic field	327
general classroom	213
corridor	149
shop or lab	109
indoor stairs	100

9. Tackle football caused 337 accidents, playing produced 336 accidents, walking 325, running 264, basketball 212, softball 167, horseplay 135, apparatus 101 and tumbling 100.

10. The apparatus involved most in injuries are:

horizontal bar	51
jungle gym	44
swings	32
slides	29

Ways to Improve Safety Education

To improve safety education every school should have a good comprehensive accident reporting system, with the reports going to one who is really interested in improving the safety

program. But the solution to our problem is a sound educational approach. Where do we start, where do we place our emphasis, where are the dangerous places, what are the activities that have the highest frequency rate? Can all of us answer these questions accurately?

A study needs to be made of accident prone children. Emotionally disturbed children can cause accidents, and should be given special help. These children can become more confident and feel more secure through helpful and special handling. (This would require dedicated teachers who would take the child and work with him alone for some time each day.)

Many schools have swimming in their elementary program which is excellent. Some also have school camping. Here again, the conditioning or preparatory stages are important; the teacher (usually the physical education teacher) is expected to have the answers and the skills to make the activities successful and safe. The teacher has a rare opportunity to release children from pressures and tensions.

In every physical education class meeting there should be three distinct periods. First, there is the warm-up time to prepare the child for the activities which are to follow. Second, there is the teaching period, when clear, concise and accurate directions are given. The third period is for demonstration and actual playing under good supervision, including the evaluation time. It is important to keep accidents to a minimum in each period.

A child should have enough space to act freely and without unnecessary limitations and crowding. We physical educators should start early to help the child be aware of himself and of those around him and to move to the best advantage and in the safest manner. Children run whether there is space or not; we must prevent collisions. We must teach the children to look where they are running and to have good footwork so they can dodge other runners. Children need to be taught how to tag, not to push or grab another child's clothing. Often the slow runner will stand back of the fast runners. If these fast runners turn around to run, the slow runners get pushed and shoved. This is difficult to help youngsters understand, but try we must. The teacher must be flexible and creative, use the facilities available in the safest manner, and have all the qualities of a good sport.

John Whiting, head of a research team at Leeds University, England, has suggested that some children are born clumsy. He

believes the main cause of clumsiness is birth injury. Children are quick to recognize the clumsy child, but teachers and parents sometimes fail to notice. Children will not choose the clumsy one, and he, then becomes the one left out or the one chosen last. He suffers socially; surely there must be some way we can help this child. Again, for safety's sake, as well as for good teaching, we physical educators must treat each child as an individual; we must think of what he is capable of doing and assign him tasks which he is able to do. We should help him be successful each day, and help him live safely.

Criteria for Teaching Safety

There are three essential ingredients for teaching safety --(1) a keen interest, (2) a superior job of teaching, and (3) public relations (let the parents know what you are doing). I have touched on the first two; now let's think of ways to help the parents understand the safety program. It would be well if parents were made aware of safety rules used at school and on trips to and from school. Sometimes parents are unaware of safety hazards they are creating. For instance, they drive the children to school and try to get them as near the door as possible. They drive the car in at an angle, let the children out of the car on the street side, or double park, causing the child to run between parked cars. The infringements are endless.

How is the problem presented diplomatically to the parents? The children might put on a safety program; they are good teachers, you know. They might use the "talking car" idea. (Our police department uses this method to get safety ideas across to children.) Some of our parents who were made aware of the unsafe practices of parents made an excellent presentation at a PTA meeting. They took pictures from the top floor of a tall apartment building next door to our school. The pictures were taken before school and at dismissal time. The parents, in some cases, saw themselves committing the errors or could identify with the people or cars in the pictures. Results were some discussion and a much better situation at the front door of our school. Another way to let parents know is for the school to publish a practical safety handbook and send one to each home. Parents could be asked to serve on a school safety council and act as the liaison between the home and the school. A safety check list is another good way to educate the parents. We must keep them informed.

Safety is important and we must remember to stress it. We should teach it in conjunction with everything we do. Safety is good common sense. Children are naturally active and energetic, and sometimes this energy seems endless. However, if we provide a good safety education program in our schools, ultimately we will have more adults who can enjoy all forms of recreation, whole in body and strong in spirit--adults who are confident, courageous and have the stamina to help teach others to play safely. All aspects of safety education are related. Let's help the children transfer the safety rules from school living to their life at home, at play or wherever they may be. There is no safety in putting things off.

Women and Drinking Drivers

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Impairment by alcohol has been clearly identified as the single most important human factor underlying unsafe actions by drivers or pedestrians in severe and fatal crashes. According to the 1968 Alcohol and Highway Safety Report of the Secretary of Transportation, "the use of alcohol by drivers and pedestrians leads to some 25,000 deaths and a total of at least 800,000 crashes in the United States each year."

In studies conducted by Pelz and Schuman in 1968, women had one-half as many accidents and violations as males. Younger women had twice as many crashes and violations as did older women, but the curves were relatively flat between the ages of 17 and 22. There is a slight tendency for accidents to rise at age 20 or 22 for young women whereas accidents and violations rise for young men to peak at age 18 or 19 years and then decline.

During the July 4 three-day weekend in 1964, 84 persons

This paper was presented at AAHPER's annual meeting in Houston, Texas, March 1972

were killed in highway accidents in California.[1] McFarland indicates that police files were available for 10 pedestrians and 41 drivers. Thirty-three of the 41 drivers were males. This compares with state-wide figures which show that 61 percent of all drivers were males. "The preponderance of high levels of blood alcohol among the dead drivers at fault seems to point to the heavy drinker as a major problem rather than the casual social drinker."

There is a dearth of statistics regarding women whether it be driving performance or another area. Most researchers have ignored women drivers and consequently there is little evidence with respect to the influence of alcohol upon the driving performance of women.

After careful investigation, I found that some factors indicating why women have not been involved in car accidents as a result of alcohol are:

1. Women don't drink as much or as frequently as men.
2. Women drive at times when traffic is not at its peak.
3. Because women drive children, they tend to be more careful.
4. Women do not reach the fatigue stage of driving because of the short distances involved.
5. When a woman goes to a party with a male companion, he usually drives.
6. Because of our culture, women are not designated as alcoholics as readily as men.
7. Judges tend to dismiss cases against women alcoholics because of children and their responsibilities.

With the assistance of Brooklyn College students, a questionnaire was prepared and given to 39 Brooklyn College women students, chosen at random, who were licensed drivers. A summary of the results of the questionnaire which was completely anonymous follows:

1. Age range of the women was 17 to 28; weight was 90 to 150 pounds; and height was 4 feet 10 inches to 5 feet 11 inches.
2. The subjects had driven from 500 to 7,000 miles per year.

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[1] Ross A. McFarland, "Alcohol and Highway Accidents - A Summary of Present Knowledge," Traffic Digest and Review (12: May 1964)

3. They had been licensed drivers for periods ranging from 6 months to 3 years.
4. Thirteen sometimes drink alcoholic beverage before driving a car.
5. Twenty-six never drink alcoholic beverage before driving a car.
6. Thirty-nine had never had a car accident with property damage because of the effects of alcoholic beverage.
7. Three had near misses.
8. Seven do not drink socially.
9. Thirty drink socially.

These results seem to reflect the current trend--alcoholism is increasing, the age level is dropping, and there has been an increase in women alcoholics of 51 percent. Five million American alcoholics affect more than 20 million other persons.

Much has to be done to stem the tide of death and maiming on the highway. Nassau County, New York State, inaugurated an "Alcohol Safety Patrol" under a $449,000 federally-funded program to remove drunken drivers from the road. A recent project in Westchester County, New York State, is similar to the "Phoenix Alcohol Research and Re-Education Project"--a 10-hour series of courses. No city ordinance requires DWIs (those convicted of Driving While Intoxicated) to attend. Those of low motivation and those convicted of manslaughter were not given the opportunity. Others faced a choice: Loss of driving license for 90 days plus $165 fine, or 10 hours in class plus the fine. Offenders paid $10 for the course. Since the initial session 5 1/2 years ago, 6,000 drivers have taken the course. Their rate of reconviction for drunk driving is significantly lower than normal.

More than 150 Americans are killed each day in automobile accidents and another 9,560 are injured. This is 10 times the daily number harmed by riots, beatings, and other forms of violence. Alcohol is involved in 50 percent of the fatalities on the highways and streets.

The Phoenix Project is no cure-all but it is so effective that 30 U. S. and Canadian cities have adopted it. Norway and England have had effective programs to deal with this problem for many years, why not here in the United States?

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Alcohol Safety Countermeasures Program

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I appreciate the opportunity to join in the program of the 1972 Midwest Institute of Alcohol Studies. My role is to acquaint you with the program designed by the U. S. Department of Transportation (DOT) to deal effectively with those who drink abusively and drive.

To put the subject into proper perspective, I want to describe briefly the nature and extent of the highway safety problem, and what is being done to deal with it. Thereafter, I'll focus more precisely on that one part of the total effort--the alcohol safety countermeasures program--which is of greatest interest to this group.

When one looks at the 1970 statistics compiled by the National Transportation Safety Board regarding fatalities by travel mode, it becomes apparent that air, marine, rail, and pipeline transportation, when compared to highways, are relatively safe travel modes. In fact, for every person who dies in an airplane crash, 37 die in highway crashes. Ninety-three percent of the problem of total transportation safety is on the highways; that translates in actual numbers to approximately 55,000 needless deaths each year.

Three elements are involved in highway safety--vehicles, drivers, and the highway. The federal agency I represent--the National Highway Traffic Safety Administration (NHTSA)--is that part of DOT which is responsible for two of these elements. The NHTSA deals with vehicles through regulation of the automobile manufacturing and equipment industries and with drivers through a partnership program involving state and local government. Its sister agency, the Federal Highway Administration, is responsible for the highway and its immediate environment.

In September 1966, the U. S. Congress enacted two landmark laws: (1) Public Law 89-563, known as the National Traffic and Motor Vehicle Safety Act, which empowers the NHTSA to promulgate motor vehicle safety standards, and (2) Public Law 89-564, known as the Highway Safety Act, which created a federal-state partnership program designed to deal with drivers and highways. Under this latter program, DOT has issued 18 highway safety standards to assure state development and implementation of programs such as motor vehicle inspection, traffic safety education, driver licensing, traffic records, and police traffic supervision.

Our enemy, and yours, is death on the highway, where more people are killed every year than in 10 years of the Vietnam war. In 1970 alone, 55,000 Americans were killed on the highway. If you are under 40, it's the most likely way you will die. In about half of the 55,000 highway fatalities, no alcohol was involved. Of the approximately 28,000 fatalities that were alcohol involved, about two-thirds were in the "problem drinker" category and about one-third in the "heavy social drinker" category.

About 2 1/2 years ago, NHTSA determined three priority areas for concentrated attention and action. Two of them--crash survivability and the experimental safety vehicle program--are outside our range of interest here. The third--the alcohol safety countermeasures program--is central to our concern in this Institute.

As you know, one can get caught up in terminology in this area. There are nondrinkers, social drinkers, heavy social drinkers, problem drinkers, pre-alcoholics, alcoholics, chronic alcoholics, and many more. For our purposes, I propose to keep the definitions and terms as basic and uncluttered as possible.

Drivers' Drinking Patterns

The drinking patterns of American drivers fall roughly into four groups. The first group, the abstainers, surprisingly comprise one in three drivers. These individuals either do not drink or drink rarely.

The second group, amounting to almost half of all drivers, can be designated as light social drinkers--light in the sense that they never at any time go beyond .10 percent blood alcohol concentration (BAC). While the abstainers and light social drinkers are involved in highway crashes, we believe that alcohol plays little or no role in their accidents.

Alcohol does play a significant role, however, for the third group--the heavy social drinkers, who occasionally drink to excess and achieve above .10 percent BAC. We estimate that a third of the drinking-driving deaths are caused by this group.

But of much more significance is the fourth group, a very small number comprising less than 10 percent of the driving population, who can be classified as having a drinking problem. They have lost control over the use of alcohol. It is these last two groups that cast the long shadows of death in alcohol related crashes, with the problem drinker involved in two-thirds of the instances. They are allowing alcohol to present a problem in their lives, as indicated by arrests and convictions in driving offenses, hospital admissions, assistance from social agencies, and family or job problems related to alcohol.

Blood Alcohol Concentration

The relative risk of a driver being involved in a highway crash starts out slowly but gains perilous momentum as his blood alcohol concentration rises. At less than .05 percent BAC, there is no significant increase in the risk of crash. It begins to rise between .05 and .10 percent. When a driver's BAC is at .10 percent, his chances of crashing are over seven times what they would be had he not had a drink. At .15 percent, he is 25 times more likely to crash than if he had had no alcohol. Unhappily, .15 percent is still the too permissive legal limit in nine states: Maryland, Massachusetts, Mississippi, Missouri, New Jersey, Oklahoma, Virginia, Wisconsin, and Wyoming. New York has set its limit at .12 percent, and the other 40 states are at .10 percent or below.

Every driver should be familiar with the amount of alcohol required to bring him to the various levels of .05 and .10, etc. For example, for someone like myself who weighs about 170 pounds, five drinks would carry me to the threshold of .10 BAC. And I can tell you that I would not want to drive, nor would you care to ride with me, even before that point was reached.

Alcohol Program in Sweden

In putting together a program to deal with the excessive use of alcohol while driving, the NHTSA took a look at Sweden's alcohol program. Ingredients of the Swedish program include mandatory chemical tests, roadblocks to apprehend drinking drivers, mandatory three-year license revocation, three-month jail sentence for driving while intoxicated, and insurance cancellation.

Undoubtedly, there are those in the United States who would oppose such a "tough" approach. Those who would, however, might do well to compare the results of the Swedish experience with the situation in this country. Whereas in the United States 50 percent of highway fatalities involve the use, and typically the excessive use, of alcohol, the comparable figure in Sweden is 10 percent.

But if there is any approach we are <u>not</u> following in our program, it is the single answer approach. We don't think there is a single answer, but rather a variety of countermeasures which can be effectively employed.

NHTSA Alcohol Safety Countermeasures Program

The NHTSA alcohol safety countermeasures program has four major elements:

1. Research and development
2. Public information and education program
3. Alcohol Safety Action Projects (ASAPs) funded by the national government
4. State and community matching grant program.

Research and Development

In the area of research and development, the NHTSA has sponsored two to three dozen projects in an effort to increase

its knowledge of the role of alcohol and other drugs in highway safety and to design new tools for use by traffic law enforcement and other agencies. Much of the research and development work is done by private contractors, and some work is done at DOT's Transportation Systems Center, a research facility in Cambridge, Massachusetts. One of its projects has been to develop a light-weight, low cost automatic portable breath tester for use by the police. Often research efforts include data collection through roadside surveys; still other efforts involve determining better means of identifying problem drinkers. Our studies have shown, for example, that two or more of the following conditions exist in problem drinking:

1. BAC greater than .15 percent
2. One or more previous arrests involving alcohol
3. Previous contacts with social agencies and medical facilities
4. Medical signs of alcoholism
5. Psychological dependence on alcohol
6. Reports of heavy drinking, loss of job time.

There are, of course, many additional research and development efforts underway.

Public Information and Education

Let's turn now to a quick review of the NHTSA's national public education program. Its goals are to:

1. Make the public aware of the tremendous loss of human life and talent involved in the alcohol and highway safety problem
2. Create public understanding and enlist its support
3. Change attitudes towards the problem
4. Activate the support of key official and professional groups
5. Speed the process of change.

In making a start at this program, the NHTSA found through a national survey that the public:

1. Knows drunk driving is bad but is not very concerned
2. Believes that the heavy social drinker is as responsible as the problem drinker
3. Underestimates the amount of alcohol required to reach illegal levels.

In an effort to combat public indifference and make the public aware of the dangers of driving while under the influence of alcohol, the NHTSA has broadcasted its message via radio and television and in newspapers and magazines.

The NHTSA is conducting neither a morality nor a health campaign. It is not against alcohol but against persons who drink abusively and then get behind the wheel of a car. They become a mindless menace, a deathly threat to other lives.

As public education plus enforcement begin to drive the problem drinkers from the road, we must not forget that the heavy social drinkers are just as guilty. They, too, have committed crimes in the eyes of the law. However, it seems a reasonable hope that the heavy social drinkers will realize the penalties as well as the dangers of driving while intoxicated, and will monitor their own drinking-driving habits.

Alcohol Safety Action Projects (ASAPs)

Let's turn now to a third element and the main thrust of the total program--the Alcohol Safety Action Projects (ASAPs). The primary objectives of the ASAPs are to save lives, to demonstrate the effectiveness of countermeasures, and to stimulate state-wide action to deal with problem drinkers. The ASAPs are entirely federally funded. Currently there are 35 projects nationwide. Nine of them have been operational just a little over one year, and the initial evaluation is most encouraging. Some of the projects became operational in the early part of 1972 while others are still in the planning stage.

The ASAPs typically incorporate the following elements:

1. Official support from the city, county, or state government involved in the project. This is critical to the program's success.
2. Public support through public information projects. The mix of public education in some of the ASAPs is heavier than in others. The NHTSA is monitoring this aspect closely to see if any difference in results can be linked to the presence or absence of the public education program.
3. Identification of problem drinkers. This can be accomplished before it is "too late" through improved identification techniques and records systems. To remove the problem drinker from the road, it is

necessary to identify him, bring him into contact with treatment agencies, and keep him from the highway until he has been helped.

4. Law enforcement. This effort is perhaps the most visible aspect of the ASAPs. In many instances this involves the use of specially trained and specially equipped units of traffic law enforcement officers (ASAP Patrols), although the use of regular officers who focus their attention, perhaps as never before, on problem drinkers is also found in the ASAPs.
5. Court action. All too often this is the point in the sequence where a "failure" seems to occur through reduced charges, inappropriate remedy, or simply inaction. We are especially stressing in the ASAPs the pre-sentence investigation and diagnosis of problem drinkers.
6. Treatment facilities. The projects depend on the availability of such facilities to handle the problem drinkers referred by the courts. DOT and the Department of Health, Education and Welfare are cooperating in ASAP areas to assure the availability of these facilities.
7. Other elements of the ASAP program, including actions by licensing authorities, provisions for car pool assistance, and special alcohol emphasis programs in driver education and driver improvement sessions.

Evaluation. The keystone for future progress, of course, lies in the area of program evaluation. We have built a sizable program evaluation into each ASAP. A small part of the evaluation takes place at the very beginning of each ASAP operation with the cooperation of officials and almost all of the driving public. Drivers are randomly stopped and politely asked to go to a waiting van for a breath test. If they are over legal limits no arrests are made, but they are driven home by volunteers. When the ASAP becomes operational, drivers over legal limits will be subject to usual arrest procedures.

Initial roadside survey results for areas in five states show that the HBD (Had Been Drinking) figures ranged between 18 and 42 percent of the drivers, while those legally intoxicated

represented about 4 percent of the driving population. Surveys done at night showed that about 4 percent on the road were legally intoxicated.

NHTSA's first year evaluation of eight of the initial ASAPs revealed that arrests for Driving While Intoxicated (DWI) increased due to education and enforcement. It has been encouraging that the courts in these areas have been able to process the increased number of cases while maintaining a high conviction rate.

In this first year evaluation, the NHTSA compared 1971 data, the first year of ASAP operation, with 1970 data when no ASAP existed. Then it compared what happened in the ASAP area with what happened elsewhere in the same state where there were no intensified alcohol safety countermeasures programs. The comparisons showed that there were 78 fewer deaths in the ASAP areas in 1971 than in 1970, the year before the ASAPs existed. In the surrounding non-ASAP areas, deaths went up 152 from the previous year. In summary, in ASAP areas fatalities decreased 8.6 percent while in non-ASAP areas they increased 1.5 percent. If these figures and percentages could have been applied in 1971 on a nationwide basis, we could have expected a reduction of 5,000 in the national highway fatality toll. These early results are encouraging and strengthen the NHTSA's resolve to push forward with the alcohol countermeasures program.

State and Community Programs

The fourth element of the program is concerned with the catalytic effect that must be generated throughout the towns, cities, counties, and states of this nation. The State and Community Highway Safety Program provides technical assistance and federal funds to states so that they may design and implement highway safety programs that will meet the standards set in driver licensing, police traffic services, and the other standards areas. Federal funds are provided on a 50-50 matching basis.

Alcohol safety requires action in many ongoing state and community program areas--education, courts, treatment, etc. There has been some action in the past. Since the program's inception in 1967, over $16 million in Section 402 funds have been provided to assist states in purchasing blood alcohol measuring devices, inaugurating police training programs, and implementing other efforts.

Legislation

Action is also necessary in passing needed legislation. Only a few states have enacted laws to combat DWI. Progress has been made in reducing from .15 BAC to .10 BAC the legal cutoff at which one is presumed to be under the influence. The national standard is .10 BAC, and most, but not all, states have come into compliance with this standard. Two states have done even better, and Canada draws the line at .08 BAC.

The NHTSA hopes to motivate legislative and administrative action in the states to widen the influence of effective alcohol countermeasures. Some states have already begun to take action. Texas, for example, has an ASAP site at San Antonio and through its financial resources and matching federal funds, it has established similar demonstration projects in three other Texas locations. Michigan has also moved forward by establishing 10 mini-ASAPs throughout the state. More projects of this type are required. The 35 ASAPs affect only 15 million of the 111 million drivers in the United States.

DOT's Alcohol Safety Countermeasures Program enjoys the support of President Nixon and Secretary of Transportation John Volpe, among others. In his message to Congress last year, President Nixon described the highway death toll as "a tragedy and an outrage of unspeakable proportions." The President has backed those words with deeds and with requests for funding, and Secretary Volpe is personally committed to this effort.

But more help is needed. The interest, understanding, and assistance of people like you can do much to aid this effort. The NHTSA is embarked on a Herculean task to reverse the tide of highway deaths. Integral to the task is the removal of problem drinker-drivers from our roads. Public apathy can be a formidable foe, but with sufficient help Americans will begin to realize the sickening waste of life and limb, and do something about it.

The Phoenix DWI Program

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This year the City of Phoenix will arrest about 9,000 people on the charge of driving while intoxicated (DWI).[1] According to police records many of these drivers have been directly involved in serious accidents, some of which have resulted in multiple deaths and injuries. A group of concerned people--including the Phoenix chief magistrate, associate magistrates, police officials, public health investigators, and educators--felt that something beyond the usual punitive and legal measures should be tried to arrest this public ill. Thus, the Phoenix Alcohol Research and Re-Education Project was established in 1966. The Phoenix DWI Course became a fundamental education-research activity of this organization.

[1] Since November 1969 an implied consent law has been in effect with Breathalyzer readings as the chemical test. A person arrested for DWI who refuses to take the test must immediately surrender his license. Arrestees who register above .10 percent are held for further action. The disposition of those who score .10 percent or below depends on other circumstances.

The Phoenix Alcohol Research and Re-Education Project is sponsored jointly by Arizona State University, Teachers College of Columbia University, and the City of Phoenix. Ernest I. Stewart, Ph. D., professor and associate dean, College of Liberal Arts, Arizona State University, is serving as project director and James L. Malfetti, director of the Safety Research and Education Project at Teachers College, is associate director. As general advisor, Chief Magistrate Eugene K. Mangum of the Phoenix Municipal Court correlates all matters relating to the city, and Phoenix Court Administrator Theodore Loveless serves as special consultant. All city magistrates are cooperating. Financial support has come from an Arizona State University faculty research grant, the Safety Research and Education Project at Columbia University Teachers College, the AAA Foundation for Traffic Safety, the PPG Industries-Foundation, and from tuition funds of participants paid to the extension division of Arizona State University.

Essentially, the Phoenix DWI Course is an educational effort to help ease the problems created by driving after drinking. It is based on the premise that if an offender is--(1) informed of the influence of alcohol on driving skills and of the consequences of drunken driving, (2) encouraged to assess his own drinking and driving behavior, and (3) allowed to explore ramifications of his behavior in a friendly, non-judicial group setting--he will be in a better position to select alternatives to DWI behavior and modify his own.

Experience to date and informal evaluations reinforce the sponsors' faith in this premise. But much remains to be done--development of new curriculum materials, experimentation with techniques to help the "student" explore his behavior, more systematic treatment of alternatives to drinking and driving, and follow-up experiences and evaluation. The course is not a cure-all but simply one way to begin the reduction of a serious social problem.

We are now conducting the 52nd DWI Course in a four-year period and have tested ideas of what goes on in each class for some time. The course is continually evolving so that it reflects the needs and characteristics of the group taking it.

Background and Development of the Course

Prior to the first DWI course, preliminary information was collected on drinking drivers in Phoenix. For example, 83 DWIs were given tests at the city jail immediately after arraignment to learn more about those who might be sent to the course. Twenty-three of these subjects were seen in small groups for a two-hour period to assess the premise on which the DWI course was to be based.

In addition, basic data on 772 DWIs were collected from files of the Phoenix Municipal Court--age, place of arrest, number of prior arrests, and other factual material obtained by police and court officers prior to the arrestee's appearance in court. The majority of the arrestees were Anglo-Saxon, male, employed, car owners, and holders of valid drivers' licenses. They had no previous arrests in Phoenix or any previous accidents. The percent of racial minority groups arrested fell below the percent of such groups living in the metropolitan area. Although the home addresses of the arrestees were scattered throughout the city and its environs, a large proportion of the arrests were made in downtown Phoenix, with a pronounced clustering in the inner city area.

With clues about the DWI population provided by the foregoing procedures, the first Phoenix DWI course was given in April 1966 with four people in attendance. The highest number in a class thus far has been 133. Since that first class numerous modifications have been made. Periodically, the characteristics of DWIs sent to a specific course are reviewed, primarily to keep the content and methods vital and relevant.

Assignment to a DWI Course

All of the individuals sent to a course have been convicted on a DWI charge. If not sent to the DWI course, they usually go instead to the Traffic Survival School given by Phoenix College (a typical and general driver education curriculum). Of the 250 drivers usually convicted each month, between 30 and 100 are sent to a DWI course, which lasts about one month. Assignment is influenced mostly by date of arraignment. Immediately after conviction, an individual is informed of assignment to the DWI course and given a statement describing it. He either attends the course or has his license suspended for 90 days. If he

attends the course and is a first offender, he keeps his license. However, the pattern of assignment seems to vary from magistrate to magistrate and is not clearly defined. Although students in the early courses seemed disproportionately to represent lower socioeconomic groups, the socioeconomic cross section of attendees has been widened recently.

Whether assigned to the course or not, those convicted of DWI pay a $150 fine plus a $15 surcharge. Some of those who take the course pay the fine before attending; most pay it afterwards. In most cases sentencing is delayed for those who are assigned. Some have their licenses suspended while attending; others are permitted to keep them. The magistrate has much leverage in determining penalties--the fine may exceed $165 and may involve suspension or revocation of license and/or imprisonment. He also may drop charges other than DWI. Many persons apprehended for DWI have been charged with other offenses. The magistrate makes clear to those assigned to the DWI course that performance in the course may well have an influence on their ultimate sentence.

About a week to 10 days before the first session, the student receives a letter from the chief magistrate reminding him of mandatory attendance of all four sessions. Even if absent with an excellent excuse, a student must make up by attending the corresponding session of a subsequent course. It should be emphasized, however, that the class is an educational effort separate from law enforcement. The instructor's only obligation to the court is to send an accurate attendance report to the chief magistrate. Otherwise he is free to do the best he can with his educational techniques.

Those apprehended for DWI have done something dramatic --e.g., caused an accident or performed in some bizarre way. Most of them plead guilty. A small fraction have hearings the morning after an overnight in the "tank," a sobering-up cell, and are unkempt and out-of-sorts when they appear before the magistrate. Others who are arrested but who seem able to think clearly are taken to a substation where they may phone for a ride home. Before leaving they are told that the arraignment will be held about two weeks later; they are therefore prepared for the hearing.

The Curriculum

For practical reasons--among them availability of personnel, resources, and facilities--the course is held on four consecutive Wednesday evenings in a courtroom of the Phoenix Municipal Court. Each session lasts 2 1/2 hours. The stated aims of the course are (a) to provide information on the consequences of drinking and driving, with specific focus on individual differences in tolerance to alcohol, and (b) to consider the reasons why people drink and drive, and counter-measures to the problem. The course is not intended to stop people from drinking--each person has to decide that matter for himself. However, the course is concerned with the harmful combination of drinking and driving. The class is conducted so as to encourage each person to explore and assess his own behavior against the opinions of his peers and instructor. Consideration of alternative behaviors is intended to help the student modify the behavior which brought him to the course.

Each course is conducted as a nonprofit extension service of Arizona State University. All registrants pay a $16 fee to the university. Thus the course is self-supporting and it is felt that the fee adds to the student's feeling of involvement. Seating charts are used to help take attendance and enable the instructors to get acquainted with the class. Midway in each session coffee is served and smoking is permitted outside the classroom. This seems to reduce anxiety and encourage participation.

Informal instruction methods are used. Students are treated as persons who come to learn rather than as offenders to be punished. Each student is encouraged to participate freely in discussions--to say what he feels without fear of reprisal. The instructors go to great length to show that they care about the students and are concerned about the critical situation created by the drinking driver. Every effort is made to treat the problem as correctable.

After considerable trial and error, it seems conclusive that the success of the process depends on the ability of the instructors to gain the students' cooperation and to show that they think both the course and the students are worthy of attention. There is confidence that if the students understand the facts of the situation, they can be counted on to follow a responsible course of action.

A brief description of each class session follows:

Session One: The Drinking Driver

In the first session a variety of techniques--on-the-spot films of highway tragedies, case studies, and special color charts--are used to convince the student that, when intoxicated, he can be a murderer on the highway. At the end of the first session, he is given home reading materials, which he will be tested on in the next session, and is asked to compose carefully an answer to this request: "Begin at a time 12 hours or so before your arrest and write down what you did, where you went, who you were with (no names), what and how much you drank, why you were drinking, and the details of the arrest itself." He writes this anonymously and brings it to the next session in a sealed, unsigned envelope.

Session Two: Alcohol and Driving Skill

Alcohol is discussed with regard to the three aspects of driving--seeing, deciding, and acting. The student is tested on his knowledge about driving ability and alcohol. He is encouraged to give examples of when he has seen such impairment in himself or in others, and what the outcomes were.

Session Three: Problem Drinking

In this session the student is given an intensive presentation on alcoholism. All facets of problem drinking are explored through a wide array of appropriate yet personal teaching devices. The student responds to a series of anonymous questions dealing with alcoholism and supplies us with some anonymous personal data.

Session Four: Personal Action

In the final session the student is briefed on how he might analyze his own situation with regard to alcohol. He is informed of appropriate personal action he can take and community resources he can seek out if he has a problem with alcohol and would like help. The challenge is now up to the arrestee. He has no excuse for being arrested again as an impaired driver.

He now knows "the way out." We call upon him to analyze his own situation; show compassion and concern for himself, his family, and his fellow citizens; and take appropriate action.

For those who are interested in more detail, the complete course is described in Rehabilitation of the Drunken Driver.[2] In addition, prints of DWI Phoenix, a documentary film of the course produced by the AAA Foundation for Traffic Safety, are available free of charge through local AAA offices to civic organizations, police departments, municipal courts, educators, and other interested groups. It is felt that the book and film together furnish a complete description, including the content and teaching techniques, for those who might wish to consider starting a similar course.

On the night that the student completes the course, the instructor congratulates him--alone or in small groups--and issues a certificate for those who attended all four sessions. Spontaneous and sincere sentiments often are expressed about the value of the course. On that night there is much determination to reform. Various informal means of evaluation have shown that some who attend do change for the better. Most students seem to appreciate their teacher's concern; they feel somebody cares.

Sentencing

At 8:00 a.m. the next day, or soon thereafter, "graduates" appear for sentencing at a courtroom adjacent to the one in which the course was held.

Before sentencing, the magistrate checks the student's attendance record. If a student missed one or more sessions he is asked to explain the reason and is told he must make up the class(es) before he can be sentenced. In a few cases the magistrate finds the student's explanation is not in good faith and sentences him immediately, without the consideration extended to those who complete the course.

Before sentencing, the magistrate also asks the student about the value of the course and his resultant plans. One must, of course, overlook much of the student's evaluation. He would

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[2] Ernest I. Stewart and James L. Malfetti, Rehabilitation of the Drunken Driver (New York: Teachers College, Columbia University, 1970), p. 259.

want the magistrate to think that he felt the course to be worthwhile. Beyond that, however, the student seems prepared to say why he believes the course is helpful, and is able to state specifically how he will behave in the future. The magistrate raises questions and makes clear that he is assuming the student means what he says. The magistrate points out that because he believes the student's sincerity, he will extend every reasonable consideration in the sentence, but will be unsympathetic if the student comes before him again on a similar charge.

Of those who have completed the course, the usual sentence for first offenders is a $150 fine plus a $15 surcharge. Because most persons arrested for DWI also have been charged with other offenses, the magistrate has the leverage to impose further sentencing; usually, however, he drops the charges. Operating within the limits and mandates of Arizona law, he is inclined to be more lenient to graduates than to those who do not take or satisfactorily complete the course.

Observations

At the beginning of Session One the student seems ashamed, impatient, hostile, or sometimes all of these. His resentment seems directed toward the police and/or courts. At this point he is frequently so frustrated that he fails to understand why the police and courts are so concerned. His own concern seems to be for himself: "I am unduly punished for my big mistake, which was getting caught." Not only has he been arrested, fined, his driver's license suspended, but he has received bad publicity, and may have been humiliated before his family and employer. On top of all that, he faces an increase in his automobile insurance premium. And now he must attend a DWI course at great inconvenience.

By the end of Session One, most students understand better the significance of the DWI problem and resent less their mandatory attendance. After seeing some of the films, they begin to understand police impatience. "If I were the officer picking up a drunk driver after coming from an accident like that I think I'd beat him over the head." They are impressed with the genuine concern of the magistrate and course personnel. These attitudes, coupled with the opportunity to participate in the course, not just listen, apparently pave the way for positive change.

Those responsible for the course feel that some progress is being made. Most students are convinced of the value of the course. Instructors find it commonplace to be stopped on the street and told so by former students. Ideas and feedback from the students, staff, and observers are used in the continuous modification of the course. Videotapes have been made of all four sessions to assist with evaluation of presentations and responses. But systematic formal evaluation, including a study of driving records, has not yet been attempted and is very much needed, even overdue.

Those who founded the course sense the advantage of having education coupled with fines and other punishment as a practical measure to combat DWI. Punitive measures alone, made more extreme, may compound the difficulty, usually by punishing the members of the arrestee's family financially and otherwise. The realistic and humanistic approach to the problem is to tie current (or improved) methods of enforcement to an educational process. This offers one promising way out of trouble and toward solution of the drunken driver problem.

Safety Seminar

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Background of Safety Seminar

Alcohol ranks as the fourth major health problem in the United States today. Statistics are even more penetrating when viewed from a traffic perspective. Studies of alcohol involvement reveal that over 50 percent of the 56,400 traffic fatalities are the result of drinking drivers, essentially somewhere between heavy social drinkers and alcoholics.

Many countermeasures to curb the drinking driver have been proposed and enacted into law by legislators. Most embody the philosophy that punishment will deter behavior. The feeling seems to be that if the drinking driver is arrested, fined, and/or jailed he will sit up and take notice and the rest of the community will realize that the authorities mean business. Rarely does this happen.

Generally speaking, people who drink alcoholic beverages are unaware of the meaning of "blood alcohol levels"--i.e., the number of drinks in relation to their body weight that will place them at the presumptive intoxication level of .05 or the legal

intoxication level of .10 as stated by Minnesota law. Stiff fines, jail sentences, and license revocation do little or nothing to educate the individual to these facts.

Realizing the above to be true, a group representing the law enforcement, judiciary, and health education professions in the community of Mankato, with the assistance of the Minnesota Automobile Association, initiated a "Safety Seminar" in 1971 designed to help persons convicted of "Driving While Intoxicated" (DWI).[1] The project was patterned after the highly successful DWI Phoenix program, but modified to fit the community of Mankato, Minnesota, with a population of 40,000.[2] The modification included its title (safety seminar was preferred over "drunken driver course"), its location (a college classroom was utilized instead of a courtroom), and its evaluation (see section on Evaluation, page 45).

Essentially, the safety seminar was established to provide the greater Mankato community with an educational alternative to other methods for curbing "driving while intoxicated" and problems caused by it. The course is based on the premises set forth in the "Phoenix Plan" that the DWI offender will be better able to modify his behavior if he is informed of the influence of alcohol on driving skill and the consequences of drunken driving, encouraged to assess his own drinking behavior, and allowed to explore the ramifications of his behavior in a college classroom setting.

The course in no way advocates total abstinence nor is it meant to be a cure-all, but simply a way of increasing one's knowledge and correcting many misconceptions in relation to the drinking driver problems.

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[1] Working closely together in planning the program have been Kenneth Clarke and Loy Young of the Mankato State College Health Science Department; Leslie Morse and A. J. Berndt, (local) municipal judges; Mankato Police Chief C. D. Alexander; Joseph McDonough, Counselor, Minnesota Valley Mental Health Clinic; and Harlan Held, president of the Minnesota Automobile Association.

[2] Ernest I. Stewart and James L. Malfetti, Phoenix DWI plan. Rehabilitation of the Drunken Driver, New York: Teachers College Press, 1970.

Aims of Seminar

The stated objectives of the course are to examine:

1. The effects of drugs on the task of driving
2. The reasons people use drugs and then drive
3. Countermeasures to the problem of drinking while under the influence of drugs.

While the influence of alcohol on the driving task is the essential concern of the course, alcohol is presented as a drug in perspective with other drugs which may cause driving problems.

The class is made up of 15 to 20 "students" who have been convicted of DWI and at the time of sentencing were given an opportunity to choose the seminar as one of the alternatives in the disposition of their case. Each participant is required to pay a $25 registration fee. This provides a self-sustaining budget for instructor and consultant fees plus educational materials. The Clerk of Court in each jurisdiction maintains contact with the instructor's secretary, and a course is scheduled as soon as 15 registrants are anticipated. The student attends four two-hour class sessions. Any session missed, for whatever reason, must be made up the next time the seminar is offered. Any student who misses the first session cannot continue with that seminar.

The project instructor and various consultants act as an instructional team for each class session. An attempt is made to create an informal atmosphere where students feel free to ask questions and enter into the discussion without fear of "being put down." Every attempt is made to convey to the student that the instructional personnel are concerned and are ready to help the individual student with his problems.

The success of the course depends on the ability of the consultants to develop a rapport with the students so that a dialogue might develop for the understanding of the facts of the situation. It is felt that if the attitudes of the individual can be changed, a responsible course of action will follow.

Session One: The Drinking Driver

In the first session, we attempt to develop an awareness of the problem of drug use and abuse, alcohol being the chemical with which we are most concerned. In setting the climate of the course, transparencies are used that depict the fact that the

individual needs to know the substances involved, the social and environmental situations which may lead to legal involvement, the dependence probability, and himself. A personal data sheet is filled out by the student in which he must review his past legal record and drinking behavior. He is also asked to write an answer to the following statement: "Begin at a time 12 hours or so before your arrest and write down what you did, where you went, who you were with (no names), what and how much you had to drink, why you drank and drove, and the details of the arrest itself." Anonymity is maintained on all personal information given. The main objective is to have the student look at himself and attempt to gain some insight into his behavior.

Films showing highway tragedies are used to reinforce the idea that when an intoxicated person drives he becomes a true menace to himself and others. To bring the problem closer to home, the chief of police and the director of the local ambulance service relate local alcohol-involved highway tragedies that have occurred in and around Mankato.

To get at the facts and misconceptions about alcohol, a 40-question alcohol test is given to the students. Two students work with one test, discussing the possibilities before arriving at the one answer they feel best satisfies the question. Upon completing the test, the instructor begins a discussion of each of the items, correcting any misinformation held by the students.

Session Two: Alcohol and Driving Skills

After a recapitulation of session one and a continuation of the discussion of the alcohol facts and misconceptions, session two emphasizes the task of driving, and how alcohol affects the individual's performance. The film, "Point Zero Eight (.08)," a research study of the effects of alcohol on Canadian race and rally drivers, shows what happens when drivers using only a small amount of alcohol are put through tests requiring a keen sense of judgment and skill.

Session Three: The Problem Drinker

The purpose of this session is to point out that within the United States there are approximately 7 million problem drinkers and alcoholics. It is these 7 million that cause 70 percent of the 28,000 alcohol-related traffic deaths each year. Charts are

used showing that risks of a traffic accident go up over 50 times with blood alcohol levels of .16 and above. It is the individual drinking excessive amounts of alcohol who needs to recognize that he is not able to drive in a safe manner. In this session a counsellor of alcoholics talks with the group and encourages those who may feel they have a problem with alcohol to seek help. During this session the student is given a written examination to determine his knowledge of alcohol as it affects him and his driving ability.

Session Four: Countermeasures and Personal Action

The examination from the third session is returned and reviewed and errors are discussed. The remainder of the session is devoted to assisting the students in deciding how they are going to avoid future legal involvements with drinking and driving. It is once again pointed out that it is not the purpose of the course to have the student practice total abstinence, but that the minimum results should be that all students refrain from driving in the future after drinking to the extent that it impairs their driving performance. Social situations involving group drinking practices are analyzed, and the "one for the road" is assessed in relation to the elevated blood alcohol levels.

The final assignment is the writing of an answer to the statement, "What I Will Do To Avoid Future DWI Behavior." Anonymity is also a part of this procedure. Upon completion of the session, the chief of police issues a certificate to each student who has attended satisfactorily all four sessions and congratulates them on their achievement. At some future appointed time the student returns to the court with his certificate for the court's disposition of his case.

Evaluation

During the last session the students are asked to complete an anonymous form to evaluate the various phases of the course. With this information and other feedback from various sources constant re-evaluation and modifications of the course are being made.

The instructor has noted a consistent, rather dramatic attitude change among the students as the course progresses. During the first session, most are apprehensive. Some are

resentful and therefore non-communicative; others are frustrated and unable to understand why the college personnel are so concerned about them. By the end of the first session, most students understand the significance of the program and begin to relax, asking questions and entering into the activities in a very cooperative manner. This impression is verified by the results of student evaluation.

At the termination of each seminar, two opinionnaires are filled out by each participant to indicate his feeling about the course. Anonymity is, again, maintained. Questions such as, "What did you like best about the seminar?" bring the response in most cases (83 percent), "The consultants and the films." To the question, "What did you dislike most about the seminar?" the participants invariably stated (97 percent) that they found nothing to their dissatisfaction. On two forms early in the fall, two individuals indicated that they disliked meeting on Monday night because they missed the TV football games; the meeting night was changed to Thursday.

On the second opinionnaire, the individual is asked to place the corresponding number of his opinion (1 strongly agree, 2 agree, 3 can't decide, 4 disagree, 5 strongly disagree) in front of each of certain statements. Following are the statements preceded by a number representing the average opinion of the participants:

4.1 1. Even before we took this course, most of us were well-informed about the effects of alcohol.

1.7 2. Providing people with information about the effects of alcohol is an important step in controlling alcohol abuse.

2.2 3. The information given in the course was interesting and informative.

4.2 4. Most people already have the information they need about alcohol. Courses like this one aren't needed.

1.4 5. I understand the dangers and problems that an alcohol user faces much better than I did a month ago.

2.2 6. I liked the motion pictures used in this course and feel they were of great value.

3.9 7. My classmates in this course really weren't very interested in the subject and were quite bored by the way it was presented.

3.8 8. The facts about alcohol which we learned in this course are really of no use in making up my mind about using alcohol.

1.3 9. The consultants and guests which were used were interesting and of great value in presenting information to the group.

3.7 10. This course really didn't change my attitude or opinion about alcohol very much.

2.3 11. I found the course to be interesting and feel that I have learned much that should help me prevent further problems with alcohol.

The advisory committee, made up of the previously mentioned officials, meet at a noon luncheon following the completion of each of the seminars, review the opinionnaires, and evaluate the course. Course modifications are discussed and recommendations suggested for improving both the administrative and instructional phases.

Although fewer than 100 students have completed four courses thus far, some interesting statistics have been compiled.

The age of the participants ranges from 18 to 60 years of age, the average age being 31.4 years. Within this age range, 47 percent of the enrollees were 25 years of age or younger. Thirty-eight percent are married, 52 percent are single, and 8 percent are divorced or separated. Educationally, 29 percent had not finished high school, 42 percent had high school diplomas, 21 percent had one to three years of post high school work, and 8 percent were college graduates. Three-fourths of the enrollees had started drinking before the age of 21 (the legal age in Minnesota), and 62 percent had previous alcohol-involved arrests.

With these and other statistics (of the 100, only one thus far has been arrested for DWI following the course), it is felt that tying enforcement to education is a realistic approach, one which will give the p rsons involved the knowledge needed to make more intelligent decisions in the future.

Wisconsin Accident Benefit Plan

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General Aspects of WIAA Accident Benefit Plan

Inaugurated during the 1930 to 1931 school year, the Wisconsin Interscholastic Athletic Association (WIAA) Accident Benefit Plan was the first of its type in the nation. The School Health Committee of the State Medical Society acts as a medical advisor to the WIAA.

During the first year of operation, 101 claims were made and total payment was $5,330. In the 1969 to 1970 school year the benefit plan reviewed its 40th season of operation in terms of nearly 37,000 claims and a total payment of slightly under $1 million. During the plan's 40 years, nearly 525,000 claims were paid, totaling over $10 million.

During the first year of operation, only athletes (about 18,000) were covered. In 1969 to 1970, more than 63,000 athletes and 425,000 other students were covered. Only the more serious types of athletic injuries were covered in the early years. Payment was made according to a schedule of allowances set up by the medical advisory committee.

There are two types of allowance. Although WIAA covers nonathletic activities, only that aspect involving athletics will be discussed here.

In 1955 to 1956 a special, or unscheduled, coverage became available. Whereas scheduled coverage was based on payments according to a schedule of allowances (maximum payment of $500), unscheduled coverage was based on charges filed, and payments were made accordingly without following a schedule (maximum payment of $2,000).

Catastrophic protection up to $10,000 was added in 1964. This provided an additional payment of 90 percent of the charges above $1000 in the scheduled plan, or above $2000 in the special plan, up to a total maximum payment on any one claim of $10,000. This catastrophic clause is contingent upon commercial coverage.

For the past year, an additional $50,000 catastrophic plan has been operating. This plan covers expenses beyond the $10,000 plan, up to $50,000.

This gives you some idea of the WIAA Accident Benefit Plan. The medical advisory committee plays a part in setting the fee schedule and also in supervising some of the questionable excessive fees in the unscheduled plan.

Athletic Aspect of WIAA

Days-out Regulations

Early in the benefit plan program, a days-out regulation was set up requiring a minimum number of days out of practice or competition for a claim to be valid. Requirements for days-out with no benefit reduction ranged from 3 days for cuts, contusions, minor sprains, etc. to 60 days for severe knee injuries.

It became apparent that an athlete might return to competition safely in less than the required number of days-out with many of the injuries. Therefore, the schedule was revised and only a few of the more serious types of injuries (such as certain bone fractures, ruptured viscera, and contusions to kidney) were assigned to a minimum number of days-out. Other injured athletes were to return to competition upon determination of the attending physician.

In 1971, the regulation was again reviewed. The minimum number of days-out was removed from all but the concussions,

skull and intracranial injuries, contusions of the kidney, and ruptured viscera. A physician's certificate is all that is required for all other injuries.

The doctor's certificate is a form provided by the school to be completed on all claims involving interscholastic competition. It is presented by the injured athlete to the physician who in turn supplies the necessary information and returns it to the school via the athlete. The certificate states the date of earliest return as indicated by the physician who, on the reverse side of the certificate, acknowledges the minimum limitations where applicable. The days-out regulation applies to return to practice and competition, but does not prevent an athlete from returning for conditioning.

The plan's executive and medical advisory committees have authority to enforce more stringent limitations, if deemed advisable, by voiding claims involving repeated injury to the same part of the body.

Treatment expense incurred after an athlete returns to competition following injury is not compensable unless evidence acceptable to the executive and medical committees is provided.

Interscholastic Athletic Disqualification, Junior and Senior High

In Wisconsin a boy may not participate in interscholastic athletics until the WIAA office has an examination and permit card on file signed by a licensed physician attesting to his medical fitness. For a girl, the examination card is the same, but it is retained in the office of the principal who certifies to the WIAA office that it is on file. Because many of these cards listed conditions that were thought to be disqualifying for contact sports, but the examining physician qualified the athlete anyway, a guide was prepared to assist physicians in their evaluation of candidates for athletics.

The guide based disqualifications on conditions of maturity, absence of severe disease of one of a paired organ, disease of the cardiovascular system, hernia and hydrocele, repeated concussions, orthopedic conditions, epilepsy and diabetes, skin diseases, and asthma and other respiratory conditions. When first published, this guide was followed strictly and athletes were not allowed to participate if found to have one of the absolute disqualifying conditions, such as one eye, one testicle, three concussions, etc.

However, much static was created regarding the disqualifying conditions of hydrocele and one testicle and some regarding the one eye clause. As a result, the committee went back to work. Now, if the examination card lists one or more disqualifying condition, and the physician disqualifies the athlete, the case is closed. If one or more condition is listed and the physician qualifies the athlete for competition, the WIAA returns the card to the school with a copy of the guide which informs the parent or guardian and the athlete of its disqualifying nature. The athlete is allowed to participate when the card is resubmitted to the WIAA through the school with written consent of parent or guardian.

Problems

One problem is the earliest date of examination. It was formerly July 1st, but this spring the date was changed to June 1st. This change was necessary because many went to camps--athletic and otherwise--which required earlier examinations.

Girls' sports are on the upswing, and their examination requires the same procedure, except that their cards are kept at the school.

The committee was asked for advice concerning the handling of conditions such as osteochondritis dissecans, and epiphysitis. It was suggested that each be handled on an individual basis. If one of these conditions is diagnosed in an athlete, and if there is history of an injury which might aggravate or precipitate symptoms, it should be noted.

Recently a decision regarding WIAA payment to podiatrists was resolved by stating that payment is proper if it covers treatment podiatrists are licensed to perform, and payment would be made to a physician for the same service.

Our examination card this year included visual acuity for the first time and we received much static about this. Some schools examine as a group and were unprepared for this addition. Leniency was granted this year but the committee feels this is an important part of the examination and in future years arrangements will be made to ensure its inclusion.

We are proud of our WIAA and its functions. The benefit plan allows for the recording of valuable statistics which have been used in many studies and reports. Many surveys are only possible because of such programs.

Injuries in Intramural Sports

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Each year millions of students participate in school and college intramural programs. These programs include formal or informal activities and offer opportunities for those individuals who may or may not be participating in interscholastic activities to have fun and promote their health and well-being.

The degree to which students are motivated to participate in, and profit from, an intramural program depends to a great extent upon the quality of administrative leadership and community support provided for such programs.

Suggested Policies and Practices

Over the years, as interest has focused on the need for more and better intramural programs various groups, such as the American Association for Health, Physical Education, and

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This was presented at the annual meeting of national organizations interested in health supervision of sports, sponsored by the Committee on Medical Aspects of Sports, American Medical Association, New Orleans, 1971.

Recreation; the National Intramural Association; the National Safety Council; and the American Medical Association, have tried to promote and improve the status of intramural programs. Desirable practices and policies for the conduct of intramural programs have been suggested by AAHPER's Division for Girls and Women's Sports, Division of Men's Athletics, and the Division of Safety Education. For many years DGWS has published Guides with rules for specific sports which have had an important influence on the quality of intramural programs for girls and women.

The Safety Education Division has published two editions of School Safety Policies with Emphasis on Physical Education, Athletics, and Recreation, and in cooperation with the United States Public Health Service, published the book Sports Safety. This publication contains information that can help translate safety policies into a sound injury prevention and accident control program. It includes principles and practices for sports injury prevention which school administrators, physical educators, coaches, intramural directors, and those responsible for community sports programs may use in improving their sports programs.

In addition, a number of texts are available that contain helpful information on the organization and administration of programs. While material on the conduct of intramural programs is plentiful, not much information is available on the injuries occurring in such programs. This is unfortunate because such information could assist accident prevention and injury control efforts in specific intramural activities.

Injuries in Public School Intramural Programs

It is difficult to assess accurately the nature and scope of injury problems in public school intramural programs because very little helpful information has been published on this subject. This may be because the incidence of injuries in both boys' and girls' intramural programs is low when compared to physical education and athletic activities. For example, a large school district with a nationally recognized accident reporting system recently eliminated intramural activities from its annual accident report because the incidence of injuries--less than 1 percent of the total number of accidents--was too low to report. A summary of school accidents occurring in Texas in 1968 to 1969 reveals

that intramural activities accounted for only 4.6 percent of the accidents, while physical education accounted for 25.8 percent, and interscholastic activities accounted for 24.9 percent.

Injuries in Intramural Sports at Michigan State University. Although there appears to be more published information on injuries in college and university programs than on public school programs, the available information is limited. As the scarcity and unavailability of detailed studies and statistics will attest, the subject of injuries in intramural programs and activities is not particularly popular.

At Michigan State University attempts have been made over the years to develop a comprehensive system of injury reporting and analysis in both the women's and men's intramural programs. According to Carol Harding, Director of Women's Intramurals, an average of 30 injuries are reported each term from among the approximately 3,000 participants scheduled in intramural sports. Nearly all of these injuries are minor. Even with the addition of touch football to this year's program, the injury picture does not seem to have been altered appreciably.

In the men's program detailed studies are made for five-year periods. The accident and injury information is analyzed and the findings are used to plan a more effective accident prevention program.

The most recent study (1962 to 1967) reported 1,306 injuries from among [illegible]72 participants in men's intramural activities. The overall picture revealed a wide variation in injury rates. In the 30 intramural activities the reported injury rate per 1,000 participants ranged from 41.7 to 0, and the injury rate per 1,000 exposures for those injuries requiring treatment ranged from 6.0 to 0. Touch football, ice hockey, basketball, and soccer had the highest injury rates. However, nearly all the reported injuries occurred in touch football, basketball, softball, and ice hockey.

Although complete data on the severity of the injuries in these sports were not available, the information obtained revealed that approximately 93 percent of the injuries were minor--more than half did not require treatment at the health center.

Injuries in Touch Football

In the 1962 and 1967 study, nearly half of the 1,306 injuries in men's intramural activities occurred in touch football. There

were 620 injuries in the touch football games which involved 14,868 participants and 71,125 exposures. The reported injury rate was 41.7 per 1,000 participants, and 4.9 per 1,000 exposures for those injuries requiring treatment.

Bruises, sprains, strains, and cuts comprised approximately 90 percent of all injuries. About half of the injuries were to the knee, shoulder, head or scalp, ankle, and face.

Most of the bruises occurred to the head or scalp, knee, face, chest, shoulder, and hip or thigh. Most of the sprains involved the ankles, fingers, and elbows. Strains occurred most frequently to the knee and shoulder, and nearly all the cuts occurred to the ocular region, mouth, head or scalp, and face.

The actions that led to most of the injuries were: colliding with another player, falling down, blocking another player or being blocked, and being hit by another player's elbow. Approximately three-fourths of the injuries caused by colliding with another player were bruises and cuts. About two-thirds of the injuries resulting from falling down were bruises and strains. Nearly two-thirds of the injuries resulting from blocking another player, or being blocked, were bruises. Nearly all of the injuries resulting from being hit by another player's elbow were bruises, cuts, and teeth knocked out or broken.

In a preliminary study of injuries and injury rates in touch football for the years 1967 to 1970, the total number of injuries reported and injuries treated at the health center between 1969 and 1970 dropped by approximately 60 percent. The main reason for the dramatic decrease in reported injuries appears to have been the university's change in medical coverage policy that year to make students injured in scheduled intramural contests responsible for their own medical costs.

Injuries in Basketball

Injuries in basketball made up 25 percent of the 1,306 reported injuries in the 1962 to 1967 study in men's intramural activities. There were 339 injuries in the basketball games, which involved 11,860 participants and 52,448 exposures. The reported injury rate was 27.7 per 1,000 participants and 2.8 per 1,000 exposures for those injuries requiring treatment.

Sprains, at 40.4 percent, were the most frequent type of injury. Bruises were second in frequency with 23.3 percent,

followed by cuts and strains with 15.6 percent each. These three types of injuries comprised approximately 95 percent of the total injuries sustained.

The ankle was most frequently injured. It was involved in 37.8 percent of the injuries. The knee was the second most frequent site of injuries, with 14.7 percent, followed by the ocular region, with 9.4 percent.

Slightly more than four-fifths of the sprains occurred to the ankle. Approximately two-thirds of the bruises were sustained by the face, knee , ocular region, head or scalp, and elbow or wrist. Slightly more than four-fifths of the cuts involved the ocular region, head or scalp, and mouth.

The actions that led to nearly two-thirds of the injuries were: landing incorrectly after rebounding or jumping for the ball, colliding with another player, and being hit by another player's elbow. Sprains accounted for 70 percent of the injuries caused by landing incorrectly after rebounding or jumping for the ball. Approximately two-thirds of the injuries resulting from colliding with another player were bruises and cuts. Nearly all of the injuries resulting from being hit by another player's elbow were cuts and bruises.

Injuries in Softball

Injuries in softball made up 11.4 percent of the 1,306 injuries in men's intramural activities between 1962 and 1967. The softball games, which involved 16,140 participants and 56,784 exposures, resulted in 250 injuries. The injury rate was 15.4 per 1,000 participants for all reported injuries and 2.1 per 1,000 exposures for those injuries requiring treatment. Bruises, sprains, cuts, and strains comprised 86.4 percent of all injuries.

The knee was most frequently injured. It was involved in 26 percent of the injuries. The elbow or wrist was the second most frequent site of injury, with 10 percent, followed by the ankle with 8.8 percent.

One-fourth of the bruises occurred to the knee and head or scalp. Three-fifths of the sprains involved the ankle and knee, and half of the cuts occurred to the knee and face.

The actions that led to slightly more than half of the injuries were: colliding with another player, sliding into a base, and catching the ball. Slightly more than three-fourths of the

injuries caused by colliding with another player were bruises, sprains, and cuts. Three-fourths of the injuries caused by sliding into a base were bruises, cuts, and abrasions. Slightly more than four-fifths of the injuries resulting from catching the ball were strains, bruises and sprains.

Injuries in Ice Hockey

Injuries in ice hockey made up 4.1 percent of the 1,306 reported injuries in men's intramural activities from 1962 to 1967. The ice hockey games, which involved 1,817 participants and 5,591 exposures, accounted for 64 injuries. The reported injury rate was 34.1 per 1,000 participants and 6.0 per 1,000 exposures for those injuries requiring treatment.

Cuts accounted for 43.8 percent of all the injuries and were the most frequent type of injury. Bruises were second, accounting for 20.6 percent of the injuries. Nearly half of the injuries occurred to the face, ocular region, and mouth.

Slightly more than half of the cuts occurred to the ocular region, face, and mouth. Half of the bruises occurred to face, arm or hand, and leg or foot.

Adequate information on the actions leading to injuries was not available for intramural ice hockey.

Recommendations

A comprehensive system of injury reporting and analysis is needed in schools and colleges as a basis for developing sound accident prevention programs. This requires close follow-up of each injury to determine its exact nature, severity, and the specific details of how it occurred and how the injury might have been prevented. Injury rates for each intramural activity can serve as a partial basis for determining future progress in accident prevention.

Better understanding of the safety problems of various activities could be affected by the free exchange of information relating to injuries which occur in intramural programs at other schools and colleges.

Persons conducting intramural activities in schools and colleges should be prepared to employ appropriate accident prevention and first aid measures for the accidents which are likely to occur in the activities they supervise.

The High School Student Trainer Program

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A few years ago the Medical Aspects of Sports Committee of the West Virginia State Medical Association introduced a pilot program for high school student trainers. This was done to help not only the team physician, but also the coaches in the various sports.

The recruitment of a desirable student trainer is not always easy. We found it best to encourage students who are interested in the sciences, premedicine, physical therapy, or in becoming athletic trainers. We prefer that they start at the 9th or 10th grade level and progress to the senior, or 12th grade level, when they can become head student trainers. Naturally, these students should have a good academic average.

In many high schools it is practically impossible for the team physician to be present at all times. The appointment of a student trainer helps the athletic program in many ways. The basic requirement for starting such a student program is to have an active team physician. It is necessary that the team physician instruct the trainer in the various aspects of injuries and what he is to do and not do.

Duties of the Student Athletic Trainer

One of the most important duties is keeping a record on all injured athletes. This procedure is lacking in most secondary schools. I feel that if we had more student trainers, we probably would have a better idea of the severity, cause, and length of time athletes are kept out of practice with certain injuries. For the busy physician today this record keeping is not possible.

The team physician should instruct the trainer on the emergency care of injured athletes. We recommend that the trainers keep the first aid chart prepared by the AMA's Medical Aspects of Sports Committee with the cooperation of the National Athletic Trainer's Association and the National Federation of State High School Association.

The following are some guidelines for the student athletic trainer:

1. He should be knowledgeable about fractures and injuries to the extremeties and other parts of the body.
2. With the supervision of the team physician, he can certainly take care of such conditions as blisters and skin abrasions.
3. At all times he should keep the team physician and the coach informed of the condition of an injured athlete. I feel that many times he can be a direct form of communication between the team physician and the coach.
4. He should keep a record of the supplies in the training room and inform the coach or athletic director when the supplies are getting low.
5. When an athlete is injured, it is his duty to see that the team physician is notified immediately. If necessary, he must take the injured athlete to the hospital and see that the physician is notified.
6. After teaching the student trainer taping procedures, we have found that they become expert in a very short time. They really practice this art, and sometimes they become more proficient than the team physician. However, they should be cautioned on when and when not to tape, and the decision should not be left up to them.

The main disadvantages we found in the high school student trainer program are that the students are not well grounded in the basic fundamentals of anatomy and physiology, and that they are quite susceptible to cultism and advertising. However, the team physician can help by being very strict, so that the student trainers don't become advocates of certain procedures.

What is the future of these young men when they finish high school? Many of them want to become physical therapists, physicians, athletic trainers, or to enter other fields in the allied health professions. The National Athletic Trainers Association now has six approved schools: Lamar State College, Beaumont, Texas; Mankato State College, Mankato, Minn.; Indiana State University, Terre Haute; University of New Mexico, Albuquerque; Purdue University, Lafayette, Ind.; and West Chester State College, West Chester, Penn.

In the future, perhaps, secondary schools can have a certified athletic trainer who would have student trainers working under him. A certified athletic trainer must also be a teacher. At present, there is a shortage of certified trainers and there has been no concerted effort to have them employed in the secondary school systems. For the time being, the student trainer is perhaps the greatest help to the team physician.

In conclusion, I feel that athletic trainers can be a great help to both the team physician and the coach. The availability of scholarships for athletic trainers is growing and some of these young men may be our future physicians.

This pilot program by the West Virginia State Medical Association's Medical Aspects of Sports Committee was started at Parkersburg High School, Parkersburg, West Virginia. It seems to be growing, and we are encouraged as it becomes more widespread.

Artificial Turf and Football Injuries

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In the past few months a great deal has been written in the sports pages concerning artificial turf and injuries. Most of the statements, both pro and con, were impressions or opinions, and very few facts were presented. In this report I will present some of our experiences in the Seattle Metro League, as well as review some of the controversy surrounding artificial turf.

In 1967 two AstroTurf fields were installed by the Monsanto Company, one in Seattle's Memorial Stadium and one at Indiana State University in Terre Haute. Prior to this the only such field used for football was in the Astrodome in Houston.

In April of 1968, the Monsanto Company published a "Survey of Football Knee and Ankle Injuries," based on the 1967 football season statistics. This report claimed an 80 percent reduction in knee and ankle injuries when AstroTurf was used instead of grass.

This paper was presented to the National Conference on the Medical Aspects of Sports, American Medical Association, New Orleans, 1971, and is reprinted with the author's permission.

Following this survey, the sports pages began to carry statements and opinions of many sports people who promoted artificial turf because of the safety factor. As an example, on November 12, 1968, the Chicago Daily News had the following subheadline: "Gale Sayer's injury turns spotlight on glaring need for employing of artificial turf to protect players." The impression was given that only those who didn't care about their players would fail to switch to artificial turf. Advertisements claiming injury reduction appeared in sports magazines and newspapers.

More recently other articles have appeared in newspapers condemning artificial turf as being more dangerous. Again, impressions and opinions were the main "evidence," along with a one-season study by Dr. James Garrick of the University of Washington.

It is a curious situation when three studies using Seattle's Memorial Stadium as one of the study fields each reach a different conclusion. The Monsanto Company's report claimed an 80 percent knee and ankle injury reduction; Dr. Garrick's study claimed nearly 50 percent more injuries on AstroTurf; and this study disagrees with both.

Monsanto Survey (1967)

First, let us look at the Monsanto survey and see how it was made. A survey questionnaire was sent to 542 colleges and universities listed in the 1967 NCAA Guide. Of this number, 185 schools returned the questionnaire. The questions asked were as follows:

1. How many knee injuries occurred in practice and required surgery?
2. How many knee injuries occurred in season games and required surgery?
3. How many knee injuries occurred in practice--no surgery required--sidelined player more than a week?
4. How many knee injuries occurred in season games--no surgery required--sidelined player more than a week?

Similar questions were asked about ankle injuries. In addition, the schools were asked to classify injuries as to whether the turf was a factor. The results from the answers

were compiled and used as a standard against which the injury rate on the AstroTurf fields was compared.

Table 1. AstroTurf Summaries in 1967.

	Football Games			
	College	Pro	H. S.	Total
Astrodome	6	-	-	6
Indiana State U.	5	-	14	19
Seattle	-	6	38	44
TOTAL	11	6	52	69

Table 1 shows the figures from which the number of games on AstroTurf were compiled. Note that the great majority of these games were high school games.

Table 2. Total Serious Knee & Ankle Injuries.

Knee Injuries - Surgical - Nonturf Related	- 2
Knee Injuries - Nonsurgical - Nonturf Related	- 1
Ankle Injuries - Surgical - Nonturf Related	- 1
Ankle Injuries - Nonsurgical - Nonturf Related	- 0
Turf Related - Knee or Ankle - Surgical or Nonsurgical	- 0
TOTAL	4

Table 2 indicates injuries reported on the AstroTurf in 1967. From the reported number of games and number of knee and ankle injuries, a figure of incidence was determined. The AstroTurf figure was .058 knee and ankle injuries per game, compared to the .362 rate reported by the NCAA schools. The Monsanto Company concluded:

> The relationship between the foot-surface interface and knee and ankle injuries is greater than even those most directly associated with the game realize. The survey results indicate approximately 50 percent turf involvement, while the experience of AstroTurf would warrant the deduction that 80 percent or more of the serious knee and ankle injuries are turf related. (There were approximately six natural turf injuries to each AstroTurf injury.)

Conclusions of the Monsanto report were published in brochures including one entitled AstroTurf Story, which had some interesting comments:

> WHAT ABOUT INJURY REDUCTION?
> Crippling knee and ankle injuries, the most common serious football and soccer injuries, are reduced up to 80 percent on AstroTurf. Here are the AstroTurf figures on football:

	Games	Practices	Knee Surgery	Ankle Surgery
ASTROTURF--1968	141	361	9	2
ASTROTURF--1967	55	94	4	1
	196	455	13	3

> These AstroTurf injury figures, the first detailed statistics ever gathered on synthetic turf injury performance, contrast dramatically with an incidence of 9.3 serious knee and ankle injuries per NCAA school in 1967 (as found by Monsanto's in-depth study). The complete injury report may be obtained from Monsanto.
>
> WHY THIS INJURY REDUCTION?
> Cleats never penetrate through Monsanto's 500-denier nylon fiber, eliminating foot lock. The foot is free to move with the blow instead of catching in the ground. Superior traction, wet or dry, is achieved by the soccer-type cleats riding entirely on the nylon fiber. Although all types of football shoes may be used on AstroTurf, Monsanto recommends the soccer-type football shoe as the shoe that gives excellent traction in all weather on AstroTurf.

1968 Study

Because some of us who were involved in Seattle football questioned the enthusiasm of this report, Frank Inslee, Dr. Allan Harlin, and I began a study of the incidence of knee and ankle injuries in the Seattle Metro League. In 1968 we began an injury report system that would allow more accurate reporting of injuries to the athletic director of the league. I might add that no such system was in effect in 1967, the year of the Monsanto survey.

Table 3. Summary of Knee & Ankle Injuries.

Injuries	Varsity Games			
	Memorial Stadium (38 games)	Sealth Field (12 games)	Shoreline Field (11 games)	Total (61 games)
KNEE - surgery	5	1	0	6
KNEE - no surgery	5	0	3	8
TOTAL - knee injuries	10	1	3	14
INJURIES PER SESSION	.263	.083	.272	.230
ANKLE INJURIES	3	1	2	6
INJURIES PER SESSION	.078	.083	.180	.098

Table 3 shows our summary of the 1968 season. It included an AstroTurf field at Memorial Stadium, a dirt field at Sealth, and a grass field at Shoreline. All three were used by the 14 teams comprising the Metro League, in the ratio shown in the table. At the end of the 1968 season, the dirt field at Sealth was closed (not because of injuries but because of attendance and crowd control problems).

Table 4. Number of Injuries Occuring on AstroTurf When Wet or Dry.

	Knee Injuries	All Other Injuries	Total
A. DRY ASTROTURF (16 games)	6	14	20
Injuries per game	.375	.875	1.25
B. WET ASTROTURF (22 games)	4	11	15
Injuries per game	.181	.500	.681

Table 4 shows an interesting observation made in 1968. At best, it gives only a general impression, and with such a small number of injuries, it had no real significance. Also the question of what was wet and what was dry was not clearcut.

The findings of the 1968 study were certainly not conclusive, but they gave some substance to our doubts of better safety on artificial surfaces as compared to grass and made further study mandatory. We have continued to collect injury reports from the coaches; we check the reports with them and contact the team physicians and treating physicians if any question of diagnosis or treatment arises.

Summary Survey of Several Seasons

Table 5 shows the summary of five seasons on AstroTurf and four seasons in which injuries on the AstroTurf were compared to those sustained on the grass field. The report of the 1971 season is complete except for a Thanksgiving Day game.

Table 5. Knee and Ankle Injuries
Seattle Metro League.

	1967		1968		1969		1970		1971	
	Astro-Turf	Grass	Astro-Turf	Grass	Astro-Turf	Grass	Astro-Turf	Grass	Astro-Turf	Grass
Knee Injuries	13	-	10	3	16	4	17	4	12	3
Surgery	1	-	5	0	7	0	6	1	2	1
# of games	38	-	38	11	46	12	45	13	47	11
Knees/game*	.342	-	.263	.273	.348	.333	.377	.308	.255	.273
Ankle Injuries	-	-	3	2	10	1	7	2	10	2
Fractures	-	-	0	0	3	0	0	0	1	1
Ankles/game	-	-	.078	.181	.217	.083	.155	.154	.213	.182

*In this study a game is considered a contest between two teams since it is the field being studied, not the individual teams. Hence, the injury rate listed is twice as high as if the study were based on team exposures.

As one can see the incidence of knee and ankle injuries over the years is quite consistent on both surfaces. In 1970, in addition to the 17 knee injuries, there was also a fractured femur, a fractured tibia, and a severe thigh hematoma that was disabling. These were not added to the knee list, because we had not done so in previous years and I didn't want to change in midstream. All told though,

1970 was a relatively bad year for knees. Also, the ratio of surgery to injuries makes one wonder if the injuries are not more severe when they occur on the AstroTurf. Of course, surgical indications vary considerably, but it is an interesting observation.

Garrick Report

Recently there has been considerable publicity given to Dr. Garrick's report. If one reads his paper, however, there is little to warrant the headlines. The paper says, "Overall, grass fields accounted for 77 injuries in 148 games or a rate of 0.52 injuries per game. Artificial surface overall accounted for 62 injuries in 80 games or 0.76 injuries per game. This was a statistically significant higher rate on the artificial surface."

I question how significant this difference is, particularly when one considers that it was a one-season study, using two high school leagues with several fields, and if nothing else, the question of comparable injury reporting.

Summary

Let me spell out what this report does and does not indicate, and also pose some questions.

The study of AstroTurf in Seattle is limited to one high school league consisting of 14 teams, playing on two fields--one AstroTurf and one grass. These factors are both the strength and weakness of the report. It is a small series conducted in one city. But it is also as close to a controlled study as one can achieve in real life. Since no other leagues are involved, the possibility of differences in injury reporting and high school statistics being compared to college or professional findings are eliminated.

The major difficulties have been accurate reporting and recording of the injuries. Some of the coaches are very cooperative and interested in this aspect of the sport. Others are really not interested in keeping good records of injuries. Only by checking with the coaches, athletic directors, team physicians, and treating physicians have we been able to compile any sort of injury list.

Now for some of the questions.

1. What is "natural turf"? This may seem like a simple question, but is it? Do we mean a lush green field, perfectly

maintained, used a limited number of times a year? Or do we mean a sun-baked, primarily dirt field with rocks and holes? Or, perhaps, a soft, boggy grass field, easily turned to mud with any rain or heavy usage? Or is the field usually frozen in the last part of the season? There may be more variations between different types of grass fields than between grass and artificial surfaces. In our report, the grass field is soft, often muddy, with divots frequently taken and holes not uncommon. Is this a dangerous or a safe field? I don't know, but I do know that abrasions on this field are rare indeed. By artificial surface I mean one of the first outdoor fields installed, with considerably less padding than is currently being used. It should not be inferred that this report holds true in a different climate where the grass fields are of a different quality. I don't know how artificial surfaces compare to natural turf fields of the South or Southwest, and I don't intend to guess.

2. What is wet and what is dry? This also seems like a fairly simple question, but is it? Many times, as a result of irregular water run-off, there are patches of wet and dry turf. Did the injury occur in the wet or the dry area? Also, what is wet? To quote from Dr. Garrick's injury report form, "The field is to be considered wet if, at center field on the 50 yard line, you can press your hand on the surface and moisture clings to your hand." You can imagine how many times this criterion is actually used. Our injury reporting is certainly not sophisticated enough to suggest accuracy in this regard.

3. Are abrasions a problem on artificial surfaces? The answer is yes. When one compares the incidence of abrasion on artificial surfaces to grass surfaces, again the type of grass field assumes some importance. A sun-baked dirt field has problems with abrasions also, but generally speaking, artificial surfaces seem to have a special problem in this regard. This is the only injury that our coaches felt was related to the surface itself. Better protective clothing and pads should lessen this problem; perhaps, wetting the field might help.

4. Do artificial fields get hot? This is not a problem in Seattle, and I have no personal experience with it. I am told, however, that heat dissipation is a problem in hot weather. A representative of the Monsanto Company stated that a light sprinkling of the field would reduce the temperature to little more than that of a grass field.

5. Has the perfect shoe been made for artificial surfaces? No, and it never will be. The coaches and players want the best traction possible for running and cutting. Physicians and others concerned about injuries would like to see less traction to lessen the impact on collision and easier loss of contact with the ground when the player is hit. The suggestion that a wet artificial surface has fewer injuries than when it is dry would add some credence to the idea that the only way to reduce injuries is to make the footing less secure. This could be accomplished by either wetting the surface or using a shoe with less traction. If this is true, then maybe one should look at the game itself to see whether some rule changes are in order.

6. Have there been any changes in the artificial surfaces? Since the first installations there have been many improvements, mainly in the padding under the turf. The newer installations have a much softer feel and are much easier on the player when he falls to the turf. In addition there are many studies going on concerning impact absorption, shoe-surface relationship, etc. I feel the manufacturers are making an honest attempt to improve their product.

7. Has there been an increase in football injuries recently? Again, this is a hard question to answer. Only accurate injury reporting over a period of time would substantiate or refute this feeling held by some people in football.

8. If there are more injuries now, what are the causes? If nothing else, players today are bigger and faster, hence, they hit with greater impact. This alone would be reason enough to expect more injuries. Collision is the name of the game. If an artificial surface seems to accentuate this, I would tend to blame the game, not the surface. Again, perhaps a few rule changes would be of importance.

9. Is surgery an indication of a more severe injury? Even this cannot be answered unequivocally. Perhaps a higher surgery rate is more an indication of the fact that leading orthopedic surgeons have convinced their colleagues that early repair gives a better end result than late reconstruction. Perhaps surgery is better accepted now, by both the player and the physician.

10. Do we need more studies? There is no doubt about the answer to this question. We need accurate and practical injury reporting at all levels--little league, high school, college, and professional. We need studies that include all kinds of

natural turf fields in all parts of the country and different climates. I am sure there are many independent studies being carried out now; however, they are often unknown to others who would be interested.

We have Sports Medicine Committees in many organizations: the American Medical Association; the American Academy of Orthopedic Surgery; the NCAA; state medical associations; and county medical societies. Let us hope that these many related groups can join forces to give continuity and responsibility to the investigation of injuries. We have seen enough shooting from the hip with questionably reliable data and one-year studies.

11. How about a moratorium on installation of artificial surfaces? This has been suggested by some, but I know of no evidence to make such a move reasonable. As things stand now, I do not believe that the manufacturers of artificial turf should be allowed to advertise injury reduction in their promotional material, and I don't believe they do at this time. Neither do I believe there is any evidence that their surfaces create any problems that didn't already exist in football.

Finally, while we worry about cleats, helmets, and artificial versus natural turf, are we missing the forest for the trees? Are we overlooking the facts of life in football? How often is a piece of equipment designed to protect the player against injury, only to be used by the player as a weapon? How many defensive backs hit the potential receiver hard enough to make him hear footsteps--if not actually to injure him? How many times is the quarterback decked as viciously as possible to make him less effective next time--if not to put him out of the game? The cry of "Stick 'em" comes from every sideline at every level of play. The name of the game is hit. That is what football is all about, and as long as it is a collision game, players are going to be hurt no matter what the surface is.

Preventing Injuries in College Intramural Sports

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Intramural recreation and sports activities should allow for maximum student participation and emphasize fun and enjoyment rather than the development of a high skill level for a few participants.

Since every type of sports activity offers some risk of injury, accident prevention procedures must be employed. I would like to discuss some ways in which injuries may be prevented in intramural and recreative sports.

Selection of Participants

While safety consciousness on the part of participants can contribute a great deal toward reducing accidents and injuries, it is careful selection of participants that is most important when developing a comprehensive program for any activity. A policy of planning competition for participants with nearly equal levels

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This paper was given at an annual meeting of the Committee on the Medical Aspects of Sports, American Medical Association, New Orleans, November 1971.

of skill and ability minimizes the danger of accidents and injuries. For instance, competition between high school and college students, or between senior high school and junior high school students, increases the possibility of injuries because of maturational differences. Varsity athletes should be excluded whenever possible from intramural competition because of the advantages they receive from training and coaching. Every effort should be made to keep competition on a level equal to the abilities of all participants.

In some cases considerable emphasis is placed on the number of students participating in recreation programs. Frequently, in an effort to increase the number of participants, the welfare of the students is neglected. In fact, emphasizing numbers instead of the safety and physical condition of the participants can be self-defeating. It has been found that well-conducted activities and proper safeguards to protect the student generate more enthusiasm for activities and encourage more students to participate.

Just as interscholastic and intercollegiate athletes commonly have medical examinations for health protection prior to participating in competitive sports, so should intramural participants.

Coaching and Teaching Skills

The unskilled person runs a much greater risk of injury since he does not know how to handle or position himself to exert maximum effort with minimum strain. Knowing the rules, techniques, and strategy of a sport is extremely important. For instance, at Michigan State University, freshmen have a higher injury rate in the intramural program than upper classmen, simply because they lack experience, especially in touch football.

Even though much of the burden of learning an activity is placed on the individual, certain situations can be created to help him develop a proper skill level. Prior to the season, team managers can hold meetings at which touch football films are shown depicting correct play and rules are discussed in depth. On a large campus, such as at Michigan State University, it is more expedient for intramural staff members to go to the residence hall complexes for preseason conferences with the students. During the playing season each game supervisor and official is instructed to critique the games played and to point out and discuss repeated violations at half-time and at the end of each game.

Training and Conditioning

Training and conditioning are important factors in injury prevention and control. Opportunities for practice and conditioning should be made available before every scheduled competition. Where it is not possible to provide these opportunities, modifications of the rules should be made to minimize the potential for injuries caused by improper conditioning.

The boundary lines of the court or playing field can be shortened. The periods of play may also be shortened to minimize fatigue, or running time may be substituted for timed periods where the clock is stopped in actual play. In intramural soccer at MSU, for example, the field is shortened to 105 by 60 yards instead of the regulation 120 by 75 yards, and the quarters are shortened from 22 minutes to 12 minutes. Intramural hockey is handled in a similar fashion. Although the rink is regulation size, the periods are shortened and running time quarters are utilized. Since ice time is at a premium, practice sessions are limited. However, all teams are required to have at least one practice session during the week prior to scheduled contests. These sessions are fully supervised, as are all contests.

Protective Equipment

The type and amount of protective equipment used is determined by the rules of the sport. Whenever possible, equipment should be furnished to ensure safety. It should fit well, be free from defects and safe for use, and inspected regularly to ensure that it is in good working order. Hockey helmets and all goalie equipment, for example, must be inspected prior to each contest.

Students should not be required to purchase expensive equipment. The use of cleated shoes in touch football should not be optional, as they give distinct advantages in running, cutting, and blocking.

Frequently, such protective equipment as helmets and shoulder pads tend to create more reckless play, as the players disregard their own safety. New lightweight plastic or inflated vinyl headgear should be explored for their potential use.

Administrative problems must be considered--such as costs; the mechanics of issuing, retrieving, and sanitizing many helmets; the need for policies to ensure that students

wear eye glass guards or safety glasses and mouth pieces in all contact sports. Exceptions should not be made so that a contest can continue; rather, contests should be stopped before exceptions are made.

Safe Play Areas

Playing areas and fields should be level, well-drained, without mud or dust, and free of obstacles. Some areas may have to be fenced or situated so that participants cannot run into streets, buildings, or other obstacles. Playing areas should be well-defined for different activities. Efforts should be made to make them as safe as possible through the use of wall padding, restraining lines for players and spectators, and brightly colored markers to define obstacles.

Supervision and Officiating

Officials and supervisors play an important safety role not only in enforcing rules but also in being alert for signs of injury or illness among the contestants. It would be ideal if intramural games could be played without officials, except perhaps for timers and those who make calls that players cannot see. Each player should be oriented to the philosophy that it is his responsibility to play within the rules, and that it is not the official's responsibility to make him control his personal actions. Good understanding of this relationship leads to a healthy atmosphere and better play.

Up to a point, the more officials assigned to a specific game, such as touch football, the fewer the injuries will be. Well-placed officials will be at the point of action more quickly and be able to keep play moving with greater continuity. Penalties should be commensurate with the severity of the injury potential of the violation. For example, offensive body blocking, shoulder blocking downfield, clipping, tripping, and unnecessary roughness all draw a loss-of-ball penalty at the line of scrimmage or at the point of greatest loss.

Accident Reporting and Injury Costs

A philosophy concerning injuries is that if the intramural program is sponsored by the university, and students are encouraged to participate and use the facilities provided and main-

tained by the university, the university should be responsible for injuries occurring during a supervised and scheduled contest.

During the school year 1969 to 1970 at MSU, the total charges for all health services to students as a result of intramural sports, exclusive of professional fees, totaled $9,255.85.

Beginning in the fall of 1970, students were made responsible for all costs for any injury incurred during intramural contests. That year the number of injuries reported, and the number of injured students reporting to the health center, dropped drastically.

In my opinion, in previous years when students were injured and had their injury costs covered by the university, a few law suits may have been prevented. If the university continued to assume costs for student injuries, it is likely that fewer individuals would be walking around with untreated injuries because they would be more willing to report their injuries and seek treatment.

The primary concern when an injury occurs is not the mechanics of recording the injury and how it happened, but that of initiating appropriate first-aid and emergency care for the injured student.

Efforts have been made at MSU to develop an effective accident reporting system to help in the prevention and control of accidents and injuries. All intramural staff members are asked to report all injuries occurring in the activities they supervise. Since they are aware of the possible uses for these accident reports, they are more inclined to complete the accident report form in a manner that will give as clear a picture as possible of the accident.

Reports from the health center on injured students are helpful because an indication is given by the physician of whether an injury is major or minor, and whether or not the student should be restricted from further participation.

First Aid and Medical Treatment

Prompt medical treatment should follow and supplement first aid and emergency care for injured students. Intramural supervisors need to be qualified to carry out first aid and emergency care procedures to help minimize further injury. Appropriate transportation of the injured to the health center by the

campus police and the availability of an on-call physician in the health center helps to ensure prompt treatment of the injured.

Injury reports from the health center, together with those completed by the intramural supervisors, are helpful in determining what needs to be done to improve the quality of the intramural program so that students get the most out of their participation in intramural sports with a minimum of accidents and injuries.

Emergency Care Education–AAHPER and Community Needs

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At the 1971 AAHPER meeting in Detroit, the Safety Education Division broke new ground in the area, "Emergency Care--New Concepts and Programs." C. Robert Clark, an orthopaedic surgeon from Chattanooga, Tennessee, spoke as the official representative of the American Academy of Orthopaedic Surgeons (AAOS) which, through its Committee on Injuries, has been instrumental in significantly upgrading the education of police, firemen, ambulance attendants, and other emergency care personnel throughout the country for the past six years.

The response to his presentation clearly indicated that AAHPER members are professionally related to and ready for, this concern. First aid courses are offered in many high schools and most colleges, and are required in many college curricula; the teachers usually come from fields covered by AAHPER. However, because of certification requirements, first aid courses must be the same everywhere, for every age, for every purpose. Emergency care, however, as an extension of first aid into advanced techniques and community organization,

can be reserved for professional education of those frequently encountering the needs of the strickened.

At the 1972 Houston Convention, the Division continued its exploration of the emergency care education field. The Division's Executive Council subsequently has established a Task Force on Emergency Care Education to convert the general interest into a practical set of guidelines for membership implementation. At the 1973 Minneapolis Convention, the Task Force will make its report available and will conduct a Workshop on Emergency Care.

Background

According to the report, Accidental Death and Disability: The Neglected Disease of Modern Society, (3) 52 million accidental injuries kill over 100,000 a year, temporarily disable over 10 million, and permanently impair 400,000 American citizens at a cost of approximately $18 billion. About 49,000 deaths in 1965 were caused by motor-vehicle accidents; more than this number died from accidents at work, in the home, in other forms of transportation, in public buildings, in recreational activities, etc. These data were even higher in 1970. (5)

It is not known how many of these tragedies could have been prevented or lessened with prompt and proper first aid and emergency care, but most estimates do not speak well for our current situation. The report emphasized that this neglected epidemic of modern society can be considered the nation's most important environmental health problem: trauma is the leading cause of death in the first half of life's span.

The report's summary included the following deficiencies as salient in bringing about needed concerted actions: (1) the general public is insensitive to the magnitude of the problem of accidental death and injury; (2) millions lack instruction in first aid; and (3) few are adequately trained in advanced techniques of cardiopulmonary resuscitation, childbirth, or other lifesaving measures (yet every ambulance and rescue squad attendant, policeman, fire-fighter, paramedical worker and worker in high-risk industry should be so trained). A fourth point could be added: While we license barbers, beauticians, etc., there is little control over the degree and quality of training of those employed to provide emergency care and transportation of the sick and injured.

Since 1967, the National Highway Safety Act has made it incumbent for each state to improve ambulance services and the training of ambulance attendants; the AAOS and the American College of Surgeons have tried to meet these needs by fostering three-day refresher courses for inservice personnel. By 1970, guidelines and recommendations for the training of ambulance attendants and others responsible for emergency care and transportation of the sick and injured were available.(1, 4) Numerous pamphlets and texts on emergency care, however, had begun to appear with varying credibility. The AAOS textbook (6) was adopted as the standard reference by the American College of Surgeons, American Medical Association, American National Red Cross, and the National Academy of Science/National Research Council (NAS-NRC); the lesson plans developed by Dunlap and Associates for the U.S. Department of Transportation for "70-hour short courses" were based on this text. Since 1970, junior colleges have been encouraged to prepare two-year programs for "emergency medical technicians" (EMTs), the newly licensable allied health profession. In 1971, the new Occupational Safety and Health Act posed definitive requirements for appropriate emergency services wherever groups of employees are housed.

Current Status

While all this action is encouraging, few communities are prepared for continuous emergency care.(2) Reliance solely on occasional crash courses and products of two-year programs will not produce very quickly the quantity or coordination of informed personnel needed to stem ineffective and incompetent handling of accidents. Also, a piece of paper with guidelines and curriculum content does not make a program.

What is needed is a community plan involving those who provide emergency care services, those who assume medical responsibility for the services, and those in educational institutions who can provide a core program for a diversity of individuals for professional preparation, research, and continuing education in emergency care. An Emergency Care Education program in a collegiate institution with a Citizen's Advisory Committee can accomplish that objective with relatively minimal investment. Most colleges and universities are already preparing first aiders. What remains is to present an emergency

care education program as a needed and viable extension of such professional interest. A survey in UpDate last winter revealed the virtual absence, nationally, of any coordinated program of this type in existence at this time. Obviously, the comprehensive institution of higher education has not been made aware of its resources' relatedness to community needs in this regard.

The Mankato Model

The Emergency Care Education program at Mankato State College, which begins this fall (1972), was well received as a functional model by the panel at Houston. It will be offered as an emphasis within the Department of Health Science to assist professional preparation, research, and continuing education for those (1) providing emergency care services (ambulance attendants, policemen, firemen, rescue squads, emergency department nurses); (2) having first aid responsibilities (industrial safety personnel, teachers, coaches, bus drivers, athletic trainers, and ski patrol); and (3) having general community and personal safety interests.

The program will be utilized by students and the community for various purposes: (1) to enrich the baccalaureate degree minor in safety education (school or community track); (2) to provide for service courses for those with appropriate prerequisites and/or career goals; (3) to provide for an associate degree major for emergency medical technicians; (4) to provide a program resource for the institution's and community's emergency service obligation to their constituents; and (5) to serve as continuing education and research areas for any of the above.

The core course sequence includes (1) advanced first aid; (2) emergency care education, which qualifies the students for the First Aid Instructor Certificate while providing them with principles concerning emergency care techniques not taught in advanced first aid plus understandings and mechanisms relating to community organization for emergency care; and (3) emergency care internship, a course providing practical emergency care experience in community and hospital settings under supervision combined with weekly seminar sessions to share and interpret the collective experiences. Continuing Education workshops on particular problematic areas will be conducted periodically (e.g., extrication; winter rescue) as need is

determined. Other courses relevant to this emphasis at Mankato include Healthful Living, Orientation to Community Health, Safety Education, Driver Education I and II, Community Development for Health, Drug Education, Health Counseling, Health Appraisals, Athletic Training, etc.

The program's coordinator, Brad Barick, is a Health Science faculty member with Red Cross Instructor-Trainer rating. He has attended two three-day workshops for ambulance drivers and is awaiting examinations to qualify as a registered EMT and EMT instructor. Further, he spends several hours weekly "riding shot gun" on the local emergency care ambulance. Local emergency medical technicians, nurses, and physicians are to be utilized as clinical adjunct faculty for the program. A community advisory committee has begun to function. Liaison with State Department of Health officials responsible for emergency services has been effected (with mutual satisfactions already). Innovative approaches to formal and informal emergency care education are very much indicated, and, by combining collegiate and community talents in this basic structure, such a goal is given credibility. Major needs beyond our current resources, for example, are:

1. Renovation of a facility to serve as a "lab" for first aid-emergency care courses.
2. Preparation of programmed learning materials in this field.

Student, community, and state interest in Mankato's program have been very gratifying and far-reaching. AAHPER members interested in this development are encouraged to correspond with the Task Force member in their district and to attend the Division's Workshop on Emergency Care at the 1973 Minneapolis Convention. Task Force members are:

Chairman:	Bernard G. Starks University of Wisconsin-Green Bay Green Bay, Wisconsin
Eastern District:	Guy S. Parcel The Pennsylvania State University University Park, Pennsylvania
Southern District:	Tom Martin University of South Carolina Columbia, South Carolina

Midwest District:	Richard Spears Indiana State University Terre Haute, Indiana
Central District:	Brad Barick Mankato State College Mankato, Minnesota
Northwest District:	To be determined
Southwest District:	To be determined

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